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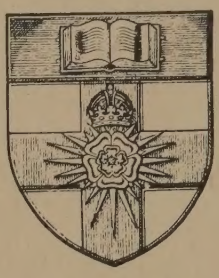
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ACCOUNTS AND PAPERS:

FORTY-SEVEN VOLUMES.

—(25.)—

RAILWAYS; TRAMWAYS.

Session
12 *March* 1894 — 25 *August* 1894.

VOL. LXXV.

1894.

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ACCOUNTS AND PAPERS:

1894.

FORTY-SEVEN VOLUMES:—CONTENTS OF THE

TWENTY-FIFTH VOLUME.

N.B.—*THE* Figures *at the* beginning of the line, *correspond with the* N° *at the foot of each* Paper; *and the* Figures *at the* end of the line, *refer to the* MS. Paging *of the Volumes arranged for The House of Commons.*

RAILWAYS.

Railway and Canal Traffic Act, 1888:

[c. 7422.] Return giving the Names of the Railway and Canal Companies comprised in the Canal Rates, Tolls, and Charges Order Confirmation Bills, Nos. 1 to 12, showing in which Bills the respective Canals are included. p. 1

[c. 7427.] Report made to the Board of Trade under Section 41 of the Railway and Canal Traffic Act, 1888, in respect of the Nene Navigation (Third Division), with Copies of Letters received from the Nene Navigation Commissioners (Third Division) upon the subject. 7

Railway Accidents:

[c. 7523.] General Report of the Board of Trade upon the Accidents that have occurred on the Railways of the United Kingdom during the Year 1893. 25

[c. 7348.] Returns of Accidents and Casualties as reported to the Board of Trade by the several Railway Companies in the United Kingdom during the Year ending 31st December 1893, with Reports of the Inspecting Officers of the Railway Department to the Board of Trade upon certain Accidents which were inquired into, &c. 51

[c. 7447.] Similar Returns for the Three Months ending 31st March 1894. 125

[c. 7524.] Similar Returns for the Six Months ending 30th June 1894. 203

Dunphail (Highland Railway):

[c. 7383.] Report on the Circumstances attending the Accident that occurred on the 27th April 1894 to a Passenger Train at Dunphail Station. 237

Accidents to Railway Servants other than Train Accidents:

166. Return showing for each Year from 1884 to 1893, inclusive, the Number of Railway Servants Killed by Accidents in which the movement of Vehicles used exclusively on Railways was concerned; and the Number of Instances in which such Fatal Accidents to Railway Servants have been Investigated by Inspectors of the Board of Trade. 245

Capital, Traffic, and Working Expenditure, &c.:

[c. 7578.] General Report to the Board of Trade in regard to the Share and Loan Capital, Traffic in Passengers and Goods and the Working Expenditure and Net Profits from Railway Workings of the Railway Companies of the United Kingdom, for the Year 1893. p. 247

Railways (Continuous Brakes):

[c. 7384.] Return (in pursuance of the Railway Returns (Continuous Brakes) Act, 1878) by the Railway Companies of the United Kingdom, for the Six Months ending the 31st December 1893. 293

[c. 7544.] Similar Return for the Six Months ending 30th June 1894. 419

Railways, &c. Bills:

39. Report by the Board of Trade upon all the Railway, Canal, Tramway, Gas, and Water Bills and Provisional Orders of Session 1894. 541

Railway Returns:

[c. 7460.] Railway Returns for England and Wales, Scotland and Ireland, for the Year 1893, with Summary Tables for United Kingdom, for each Year from 1854 to 1893, &c. 585

Railways (Signal Arrangements and Systems of Working):

[c. 7543.] Return by Railway Companies in the United Kingdom relative to the Interlocking and Concentrating of Signal and Point Levers, &c., and to the System or Systems upon which the Lines of Railway under their control were worked on 31st December 1893. 697

Railway Servants (Hours of Labour):

320. Report by the Board of Trade respecting the Proceedings of the Board of Trade under the Railway Regulation Act, 1893, during the Year ended 27th July 1894. 803

Railways (Workmen's Trains):

[c. 7542.] Notes of Conference held at the Board of Trade on 28th June 1893, with Representatives of the London County Council, and Representatives of the Railway Companies having Termini in the Metropolis, and also of subsequent Correspondence between the Board of Trade, the London County Council, and the Railway Companies. 823

Railways (Workman's Trains on the Metropolitan Lines):

[c. 7541.] Statements furnished to the Board of Trade by the Railway Companies having termini in the Metropolis in reply to a circular letter requesting information on the subject (in continuation of [c. 6039] of 1890); a General Statement showing the Total Number and Mileage of the Trains required to be run by Special Act of Parliament; and also of those actually running in the Years 1883, 1890, and 1894 on the Metropolitan Lines. 859

Cheap Workmen's Tickets:

316. Correspondence between the Board of Trade and certain Railway Companies relative to the Conditions upon which Tickets are issued at Cheap Rates to Workmen as regards the Limitation of the issuing Company's Liability in case of Injury or Death. 919

TRAMWAYS.

Tramways and Gas and Water Orders:

[c. 7494.] Report by the Board of Trade of their Proceedings under the Tramways Act, 1870, and the Gas and Water Works Facilities Act, 1870, during the Session of 1894. 929

Tramways Orders Confirmation (No. 1) Bill [H.L.]:

206. Memorandum stating the Nature of the Proposals contained in the Provisional Orders included in the Tramways Orders Confirmation (No. 1) Bill. p. 935

Tramways Orders Confirmation (No. 2) Bill [H.L.]:

210. Memorandum stating the Nature of the Proposals contained in the Provisional Orders included in the Tramways Orders Confirmation (No. 2) Bill. 937

Tramways (Street and Road):

270. Return of Street and Road Tramways authorised by Parliament, showing the Amount of Capital authorised, paid up, and expended, the Length of Tramway authorised, and the Length open for the public conveyance of Passengers down to the 30th day of June 1894; the Gross Receipts, Working Expenditure, and Net Receipts, the Number of Passengers conveyed, and the Number of Miles run by Cars during the Year ended the 30th day of June 1894; together with the Number of Horses, Engines, and Cars at that Date (in continuation of No. 400, 1893–94). 939

RETURN

GIVING THE

Names of the Railway and Canal Companies, comprised in the Canal Rates, Tolls, and Charges Order Confirmation Bills, Nos. 1 to 12, showing in which Bills the respective Canals are included.

Presented to both Houses of Parliament by Command of Her Majesty.
June 1894.

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Index to Canal Rates, Tolls, and Charges Order Confirmation Bills.

Alphabetical List of Canals and Navigations included in the Order Confirmation Bills.	No. of Bill.
ENGLAND AND WALES.	
Aberdare Canal Navigation	3
Ancholme River Navigation	7
Ashby Canal (*see* Midland Railway Company)	1
Ashton Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Basingstoke Canal Navigation	7
Beverley Beck	3
Birmingham Canal	4
Birmingham and Warwick Junction Canal	3
Borobridge and Ripon Canal (*see* North-Eastern Railway Company)	1
Bradford Canal	3
Brecon and Abergavenny Canal (*see* Great Western Railway Company)	1
Bridgewater Canals (*see* Manchester Ship Canal Company)	2
Bridgwater and Taunton Canal (*see* Great Western Railway Company)	1
Calder and Hebble Navigation	3
Cam River Navigation	8
Chelmer and Blackwater Navigation	3
Chesterfield Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Chichester Canal	3
Coventry Canal Navigation	3
Cromford Canal (*see* Midland Railway Company)	1
Dearne and Dove Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Derby Canal	3
Derwent River Navigation (*see* North-Eastern Railway Company)	1
Driffield Navigation	7
Droitwich Canal	3
Droitwich Junction Canal	3
Dun River Navigation (*see* Manchester, Sheffield, and Lincolnshire Railway-Company)	1
Eau Brink Navigation	8
Erewash Canal	3
Exeter Canal	7
Foss Navigation	7
Fossdyke Navigation (*see* Great Northern and Great Eastern Joint Committee)	1
Furness Railway Company (in respect of the Ulverston Canal)	7
Glamorganshire Canal	2
Gloucester and Berkeley Canal	3
Godalming Navigation	3
Grand Union Canal	3
Grand Western Canal (*see* Great Western Railway Company)	1
Grantham Canal (*see* Great Northern Railway Company)	1
Gravesend and Rochester Canal (*see* South-Eastern Railway Company)	7
Great Northern Railway Company (in respect of the Grantham Canal, Nottingham Canal, and Witham Navigation)	1
Great Northern and Great Eastern Joint Committee (in respect of the Fossdyke Navigation)	1
Great Western Railway Company (in respect of the Brecon and Abergavenny Canal, Bridgwater and Taunton Canal, Grand Western Canal, Kennet and Avon Canal Navigation, Monmouthshire Canal, Stourbridge Extension Canal, Stratford-upon-Avon Canal Navigation, Swansea Canal, River Tone Navigation, and Trewyddfa Canal)	1
Huddersfield Canal (*see* London and North-Western Railway Company)	1
Ipswich and Stowmarket Navigation	7
Kennet and Avon Canal (*see* Great Western Railway Company)	1
Kensington Canal (*see* West London Extension Railway Company)	7
Lancashire and Yorkshire Railway Company (in respect of the Manchester, Bury, and Bolton Canal)	1
Lancaster Canal (North End) (*see* London and North-Western Railway Company)	1
Lancaster Canal (South End) (*see* London and North-Western Railway Company)	1
Larke River Navigation	9
Lea Wood Branch Canal (*see* Midland Railway Company)	1
Lee River Navigation	6
Leicester Navigation	3
Leicestershire and Northamptonshire Union Canal	3
Leven Canal	7
Linton Lock Navigation	7
London and North-Western Railway Company (in respect of the Huddersfield Canal, Lancaster Canal (North end and South end), St. Helens Canal, and Shropshire (Coalport) Canal)	1
Loughborough Navigation	3
Louth Navigation Canal	3
Lower Avon Navigation	3
Macclesfield Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Manchester, Bury, and Bolton Canal (*see* Lancashire and Yorkshire Railway Company)	1
Manchester, Sheffield, and Lincolnshire Railway Company (in respect of the Ashton Canal, Chesterfield Canal, Dearne and Dove Canal, River Dun Navigation, Macclesfield Canal, Peak Forest Canal, Sheffield Canal, and Stainforth and Keadby Canal)	1
Manchester Ship Canal Company (in respect of the Bridgewater Canals)	2
Market Weighton Navigation	7
Medway (Upper) Navigation	2
Medway Lower Navigation	3
Middle Level Navigation	8
Midland Railway Company (in respect of the Ashby Canal, Cromford Canal, Lea Wood Branch Canal, and Pinxton Branch Canal)	1

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Alphabetical List of Canals and Navigations included in the Order Confirmation Bills.	No. of Bill.
Monmouthshire Canal (*see* Great Western Railway Company)	1
Neath Canal Navigation	3
Nene River Navigation (1st and 2nd Navigation Divisions)	8
Nene River Navigation (3rd Navigation Division)	8
Newcastle Canal (*see* North Staffordshire Railway Company)	1
North-Eastern Railway Company (in respect of the Borobridge and Ripon Canal, River Derwent Navigation, and Pocklington Canal)	1
North Staffordshire Railway Company (in respect of the Newcastle Canal and Trent and Mersey Navigation)	1
North Walsham and Dilham Canal	7
Nottingham Canal (*see* Great Northern Railway Company)	1
Nutbrook Canal	3
Ouse River Navigation (Beds and Hunts)	8
Do. do. (Sussex)	7
Do. do. (York)	7
Oxford Canal	3
Peak Forest Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Pinxton Branch Canal (*see* Midland Railway Company)	1
Pocklington Canal (*see* North-Eastern Railway Company)	1
Regent's Canal	5
Rochdale Canal	2
St. Helens Canal (*see* London and North-Western Railway Company)	1
Severn Navigation	6
Sheffield Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Shropshire (Coalport) Canal (*see* London and North-Western Railway Company)	1
Shropshire Union Canals	2
Somersetshire Coal Canal Navigation	3
South-Eastern Railway Company (in respect of the Gravesend and Rochester Canal)	7
South Level Navigation	8
Staffordshire and Worcestershire Canal	3
Stainforth and Keadby Canal (*see* Manchester, Sheffield, and Lincolnshire Railway Company)	1
Stort River Navigation	3
Stour River Navigation	3
Stourbridge Navigation	3
Stourbridge Extension Canal (*see* Great Western Railway Company)	1
Stratford-upon-Avon Canal (*see* Great Western Railway Company)	1
Stroudwater Navigation	3
Surrey Canal	6
Swansea Canal (*see* Great Western Railway Company)	1
Thames River Navigation	6
Thames and Severn Navigation	7
Thetford Navigation	8
Tone River Navigation (*see* Great Western Railway Company)	1
Trent Navigation	2
Trent and Mersey Navigation (*see* North Staffordshire Railway Company)	1
Trewyddfa Canal (*see* Great Western Railway Company)	1
Ulverston Canal (*see* Furness Railway Company)	7
Warwick and Napton Canal	3
Weaver River Navigation	6
West London Extension Railway Company (in respect of the Kensington Canal)	7
Wey Navigation	3
Wilts and Berks Canal	3
Wisbech Canal	8
Witham Navigation (*see* Great Northern Railway Company)	1
Worcester and Birmingham Canal	3
SCOTLAND.	
Caledonian Railway Company (in respect of the Forth and Clyde Navigation and Monkland Canal)	10
Edinburgh and Glasgow Union Canal (*see* North British Railway Company)	10
Forth and Clyde Navigation (*see* Caledonian Railway Company)	10
Monkland Canal (*see* Caledonian Railway Company)	10
North British Railway Company (in respect of the Edinburgh and Glasgow Union Canal)	10
IRELAND.	
Barrow Navigation	12
Grand Canal	12
Lagan Navigation	11
Lower Bann Navigation	11
Midland Great Western Railway of Ireland Company (in respect of the Royal Canal)	11
Newry Navigation	11
Royal Canal (*see* Midland Great Western Railway of Ireland Company)	11
Shannon River Navigation	11
Strabane Canal	12
Tyrone Navigation	11
Ulster Canal	11

Canal Rates, Tolls, and Charges Orders Confirmation Bills.

No. of Bill.	List of Railway and Canal Companies.
No. 1.	Great Northern Railway Company. Grantham Canal. Nottingham Canal. Witham Navigation. Great Northern and Great Eastern Joint Committee. Fossdyke Navigation. Great Western Railway Company. Brecon and Abergavenny Canal. Bridgwater and Taunton Canal. Grand Western Canal. Kennet and Avon Canal Navigation. Monmouthshire Canal. Stourbridge Extension Canal. Stratford-upon-Avon Canal Navigation. Swansea Canal. Tone River Navigation. Trewyddfa Canal. Lancashire and Yorkshire Railway Company. Manchester, Bury, and Bolton Canal. London and North-Western Railway Company. Huddersfield Canal. Lancaster Canal (North end). Do. (South end). St. Helens Canal. Shropshire (Coalport) Canal. Manchester, Sheffield, and Lincolnshire Railway Company. Ashton Canal. Chesterfield Canal. Dearne and Dove Canal. Dun River Navigation. Macclesfield Canal. Peak Forest Canal. Sheffield Canal. Stainforth and Keadby Canal. Midland Railway Company. Ashby Canal. Cromford Canal. Lea Wood Branch Canal. Pinxton Branch Canal. North-Eastern Railway Company. Borobridge and Ripon Canal. Derwent River Navigation. Pocklington Canal. North Staffordshire Railway Company. Newcastle Canal. Trent and Mersey Navigation.
No. 2.	Bridgewater Canal. Glamorganshire Canal. Medway (Upper) Navigation. Rochdale Canal. Shropshire Union Canals. Trent Navigation.
No. 3.	Aberdare Canal Navigation. Beverley Beck. Birmingham and Warwick Junction Canal. Bradford Canal. Calder and Hebble Navigation. Chelmer and Blackwater Navigation. Chichester Canal. Coventry Canal Navigation. Derby Canal. Droitwich Canal. Droitwich Junction Canal. Erewash Canal.
No. 3. —*cont.*	Gloucester and Berkeley Canal. Godalming Navigation. Grand Union Canal. Leicester Navigation. Leicestershire and Northampton Union Canal. Loughborough Navigation. Louth Navigation Canal. Lower Avon Navigation. Medway Lower Navigation. Neath Canal Navigation. Nutbrook Canal. Oxford Canal. Somersetshire Coal Canal Navigation. Staffordshire and Worcestershire Canal. Stort River Navigation. Stour River Navigation. Stourbridge Navigation. Stroudwater Navigation. Warwick and Napton Canal. Wey Navigation. Wilts and Berks Canal. Worcester and Birmingham Canal.
No. 4.	Birmingham Canal.
No. 5.	Regent's Canal.
No. 6.	Lee River Navigation. Severn Navigation. Surrey Canal. Thames River Navigation. Weaver River Navigation.
No. 7.	Ancholme River Navigation. Basingstoke Canal Navigation. Driffield Navigation. Exeter Canal. Foss Navigation. Furness Railway Company. Ulverston Canal. Ipswich and Stowmarket Navigation. Leven Canal. Linton Lock Navigation. Market Weighton Navigation. North Walsham and Dilham Canal. Ouse River Navigation (Sussex). Ouse River Navigation (York). South-Eastern Railway Company. Gravesend and Rochester Canal. Thames and Severn Navigation. West London Extension Railway Company. Kensington Canal.
No. 8.	Cam River Navigation. Eau Brink Navigation. Middle Level Navigation. Nene River Navigation (1st and 2nd Navigation Divisions). Nene River Navigation (3rd Navigation Division). Ouse River Navigation (Beds and Hunts). South Level Navigation. Thetford Navigation. Wisbech Canal.
No. 9.	Larke River Navigation.

No. of Bill.	List of Railway and Canal Companies.
No. 10.	Caledonian Railway Company. Forth and Clyde Navigation. Monkland Canal. North British Railway Company. Edinburgh and Glasgow Union Canal.
No. 11.	Lagan Navigation. Lower Bann Navigation. Midland Great Western Railway of Ireland Company. Royal Canal. Newry Navigation.
No. 11. —*cont.*	Shannon River Navigation. Tyrone Navigation. Ulster Canal.
No. 12.	Barrow Navigation. Grand Canal. Strabane Canal.

Board of Trade,
Whitehall Gardens,
June 1894.

COURTENAY BOYLE,
Secretary.

REPORT

MADE TO THE

BOARD OF TRADE

UNDER SECTION 41 OF THE

RAILWAY AND CANAL TRAFFIC ACT, 1888,

IN RESPECT OF THE

NENE NAVIGATION (THIRD DIVISION)

TOGETHER WITH

COPIES OF LETTERS RECEIVED FROM THE NENE NAVIGATION COMMISSIONERS (THIRD DIVISION) UPON THE SUBJECT.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

[C.—7427.] *Price* 2½*d.*

Nene Navigation (Third Division).

Board of Trade (Railway Department),
8, Richmond Terrace, Whitehall, London, S.W.,
6th February 1892

SIR,

I HAVE the honour to report, for the information of the Board of Trade, that in compliance with your instructions, I have inspected at various times during the summer and winter months the navigation under the jurisdiction of the Nene Navigation Commissioners (Third Division), between Peterborough and Wisbech.

Extent of the Third Navigation Division.

Under the Nene Valley Drainage and Navigation Improvement Act, 1852, the third navigation division extends for a distance of 16 miles 4¾ furlongs from Peterborough Bridge to Bevis Hall, about 2½ miles from Wisbech.

Constitution of the Commission.

Under the provisions of section 57 of the Nene Valley Act of 1862 the Commissioners are persons appointed :—

Four by the Council for the Borough of Wisbech.
One by the North Level Commissioners.
Two by the Wisbech Sewers Commissioners.
Two by the Commissioners of the Nene Wash Lands.
One by the Peterborough Improvement Commissioners.
One by the Waldersea Drainage Commissioners.
One by the Duke of Bedford, his heirs or assigns.

Powers and duties of the Commissioners.

Under section 61 of the Act all the powers, jurisdiction, and authority of the incorporated Commissioners, under Acts of 1852 and 1854, with reference to and within the Third Navigation Division, and all navigation tolls, duties, &c., are transferred to and vested in the Navigation Commissioners, who are empowered to exercise all "powers, jurisdiction, and authority with reference to the maintenance, superintendence, and conservancy of the navigation in the Third Division and the works thereof."

Application of tolls.

Under section 62 of the Act, the tolls, duties, and sums received are to be applied as follows :—

One half annually to be paid to the Treasurer of the Corporation of Wisbech.

One half to be retained by the Navigation Commissioners, and to be applied after payment of expenses of management to the "maintenance and conservancy of the navigation of the river in the Third Navigation Division and the works thereof" ; any surplus being paid to the treasurer of the Corporation of the Borough of Wisbech.

Description of the Third Navigation Division.

The following is a brief description of the Third Navigation Division :—

Broadwater.

Below Peterborough Bridge the navigation is first through the old channel of the river, here from 150 ft. to 175 ft. in width, but at a point 40 chains below the bridge, this channel turns off in a southerly direction to Standground Sluice, being for the distance of 48 chains to this sluice known as Broadwater, and having a width varying from 50 ft. to 100 ft.

Smith's Leam.

From the point of divergence the navigation to Bevis Hall, a distance of 16 miles 4¾ furlongs from Peterborough Bridge, and onwards to Wisbech, which is about 19 miles below Peterborough, is continued in a south-easterly direction, first through an artificial channel cut in 1726–8, and known as Smith's Leam, which has a width varying from 45 ft. to 65 ft., and is tolerably straight for the greater part of its length of 13 miles to Guyhirn; and then for the remainder of the distance through one of the old river channels artificially banked. Parallel and close to Smith's Leam on the north side, and as far as Guyhirn, 13 miles 1¾ furlongs from Peterborough, runs the north bank and drain; and more or less parallel to it on the south side, but at a distance varying from 15 chains to 75 chains, runs Morton's Leam, a channel narrower than Smith's Leam, but formerly navigable, cut originally in 1478–86, and reopened by the Bedford Level Corporation in 1630, outside which channel is the south bank protecting the Middle Level.

Morton's Leam.

Morton's Leam, which is under the jurisdiction of the Nene Wash Commissioners, leaves Broadwater just above Standground Sluice, and joins the River Nene, 13 miles 1¾ furlongs from Peterborough, just above Guyhirn, where there is a sluice at the end of Morton's Leam, so constructed as to allow water to flow out into the River, but preventing the flood tide from flowing in. Between Morton's Leam and Smith's Leam are the Wash Lands, comprising an acreage of about 3,500 acres, which are liable to be flooded whenever the water in Smith's Leam rises to a level of about 36 ft. 4 ins. above Nene Valley datum, which datum is 25·85 ft. below ordnance datum.

Thorney River.

North of Smith's Leam, lies the Thorney Lordship, and at Dog-in-a-Doublet, 5 miles 2 furlongs below Peterborough, there is a cut called Thorney River communicating with Smith's Leam by a sluice, and leading to Thorney. This river, which was cut in 1660, is used both for navigation purposes, and also for the supply of fresh water in the Thorney Lordship and North Level.

Delph Dyke.

Nearly opposite to Dog-in-a-Doublet Sluice is a cross-cut called Delph Dyke, leading from Smith's Leam to Morton's Leam towards Whittlesea. This cut, and also Black Dyke, another cross-cut to Morton's Leam at a point 3 miles 2 furlongs below Peterborough, were, it is stated, a good deal used by barges 40 or 50 years ago, to escape the shoals higher up Smith's Leam, and to get to Broadwater through Morton's Leam, but this route is now impracticable. Delph Dyke has been deepened, and on the ebb tide there is a strong current setting down through it and Morton's Leam to Guyhirn, and out into Smith's Leam through the sluice at that place.

River Nene.

Between Guyhirn and Wisbech the channel of the River Nene becomes somewhat wider, and runs for the whole distance between artificial banks.

Muscat River.

A short distance below Peterborough Bridge the bed of an old branch of the River Nene, known as the Muscat River or Catswater, diverges towards the north-east, and in ancient days this channel, which is still well defined, passing on the west, north, and east sides of the Thorney Lordship, and joining the main channel at Guyhirn, was connected also with the River Welland.

Standground and Dog-in-a-Doublet Sluices.

Standground Sluice, at the end of Broadwater, 1 mile 8 chains below Peterborough Bridge, is under the jurisdiction of the Middle Level Commissioners, and Dog-in-a-Doubtlet Sluice is under that of the Duke of Bedford. The sills of these two sluices are at a level of 29·830 ft. above Nene Valley datum.

Freshwater Rights.

Between Woodstone Staunch, which is above Peterborough, and Wisbech, there are in Smith's Leam, and in the Nene River no locks, sluices, staunches, or weirs of any kind, and no stream or river flows into the leam, but water can be abstracted from it, without any statutory limitation as to quantity or levels, at Standground Sluice and Dog-in-a-Doublet Sluice, under the provisions of sections 173, 174, 175, 182, and 194 of the Act of 1852, confirmed by section 32 of the Act of 1862. Although no stream joins Smith's Leam there is a small tributary named in the ordnance survey, Standground Lode which joins Broadwater, and which drains a considerable extent of land in Huntingdonshire.

Alternative Route by Middle Level.

Between Standground Sluice and Wisbech there is an alternative navigable route running past Whittlesea, and then turning towards the north-east, passing March, and joining the River Nene 13 chains below the bridge at Wisbech. This navigable

channel, in which it is stated there is always a depth of from 4 ft. to 5 ft. of water, is known at different parts of its course as King's Dyke, Whittlesea Dyke, Old River Nene, and Wisbech Canal, and it is under the jurisdiction of the Middle Level Commissioners. The distance from Peterborough to Wisbech by this route is about 34 miles, as compared with about 19 miles by Smith's Leam.

Tolls.

Prior to the Act of 1852 the Nene Navigation was free of toll, but under the powers defined in section 105 of that Act, which were transferred to the Nene Navigation Commissioners by the Act of 1862, the following is the scale of tolls on the Third Navigation Division :—

For every ton of coals; for every hundred of battens; for every half-hundred of other deals; for every load of timber, accounting 40 feet to the load; for every eight packs of wool, accounting 10 pod to the pack; for every load of wheat, rape seed, linseed, cole seed, barley, rye, oats, peas, or beans, accounting five quarters to the load; for every 2,000 of turf; for every load of reed, sedge, hay, flax, or hemp, reckoning 20 cwt. to the load; for every last of malt; for every 1,000 of tiles; for every 500 of bricks; for every 20 feet of stone; and for every ton of lime, ... For every ton weight of all other goods, wares, merchandise, or commodities whatsoever, and so in proportion for any greater or less quantity or weight, ... sixpence in the Third Navigation Division.

These tolls are chargeable if any part of the navigation is used, so that for barges using this division from Standground Sluice to Peterborough, a distance of 1 mile 8 chains, the same toll of 6*d.* per ton has to be paid as for those using it for the distance of 16 miles $4\frac{3}{4}$ furlongs from Bevis Hall, or for the whole distance from Wisbech.

Tolls by alternative route.

The tolls per ton chargeable to barges using the route by Wisbech Canal and Whittlesea to Standground Sluice are as follows :

	s.	*d.*
Wisbech Canal - - - - - -	0	6
Outwell Sluice - - - - -	0	3
Marmont Priory - - - -	0	2
Standground Sluice - - - - -	0	3
Total - - - -	1	2

This sum is in addition to the sum of 6*d.* payable as above to the Nene Navigation.

It is stated that the time occupied on the journey of 34 miles by Wisbech Canal, &c. is from two to three days, while, when there is sufficient water, the journey of 19 miles by Smith's Leam can be performed in nine hours.

Barges.

The ordinary barges or lighters using the navigation carry about 20 tons each, and when loaded draw from 3 ft. to 3 ft. 6 ins. of water. It is stated that on an average between 50 and 60 barges come up to Peterborough weekly, and that the total number using the navigation is about 100.

Tides and Tidal Ranges.

As has been pointed out by Sir J. Coode in a very interesting report drawn up in 1874, after a careful investigation of the subject, the action of the tides between Bevis Hall and Peterborough, and indeed throughout the whole of the tidal portion of the River Nene is very peculiar, so much so that during spring tides there are two currents in the river running in opposite directions at the same time, viz., the ebb making towards the sea, and the flood running towards Peterborough, the slack-water zone between the two advancing upwards in the meantime from the North Level Sluice to Guyhirn Bridge. It appears that, although the spring tides are just felt at Peterborough, the salt water runs up only as far as Dog in-a-Doublet, or for a short distance higher up when there is very little fresh water in the river, while the neap tides are not felt at all above Dog-in-a-Doublet.

The following are the tidal ranges at different places in the Third Division, given by Sir J. Coode as the result of the gauging taken at a neap tide, rather lower than usual, on September 21st, 1874, and at a spring tide, rather higher than usual, on September 26th, 1874, at a time when there was very little fresh water in the river:—

Place.	Tidal Range.	
	Neap.	Spring.
	ft. ins.	ft. ins.
Waldersea Sluice - - -	6 7	12 2
Guyhirn Bridge - - - -	4 6	8 11
Cross Guns - - - -	1 8	6 7
Dog-in-a-Doublet - - -	0 0	2 10
Northey Gravel - - -	0 0	1 2
Peterborough - - -	Not taken.	0 $2\frac{1}{2}$

Works under Act of 1852.

Under the Act of 1852 it was, among other works, contemplated to deepen the river between Bevis Hall and Peterborough, removing the shoals, and providing a navigable channel, with a bottom 33 ft. in width. This channel, according to the sections deposited, provided a minimum depth of water below the high water mark of a good spring tide of 6 ft. at Peterborough, 7 ft. 6 ins. at Northey Gravel, 9 ft. 6 ins. at Dog-in-a-Doublet, 14 ft. at Cross Guns, and 15 ft. 6 ins. at Guyhirn.

A considerable amount in money was spent in so deepening the river below Guyhirn but very little was done above that place, except the erection of an expensive swing bridge at Dog-in-a-Doublet, which now stands on the south side of Smith's Leam, spanning what was intended to be a diversion of the Leam.

The total amount spent on works between Bevis Hall and Peterborough is stated to have been about 50,000*l.*

The whole of the money authorised to be raised under the Act of 1852, amounting to nearly 194,000*l.*, having been expended, the Act of 1862 was obtained, and under that Act there were powers to maintain, but not, apparently, to improve the navigation.

Works undertaken in 1864.

In 1864 a contract was entered into by the Nene Navigation Commissioners (third division) for the deepening of Smith's Leam from Peterborough to a point 7 miles lower down, by the removal of the shoals at Northey Gravel and other places, so as to give a minimum depth at high water spring tide of 3 ft. 6 ins. for the first 3 miles, of 3 ft. 8 ins. for the next $\frac{3}{4}$ mile, of 3 ft. 9 in. for the next $\frac{3}{4}$ mile, and 3 ft. 10 ins. for the remaining distance of $2\frac{1}{2}$ miles. The navigable channel of the above depths to have a width at the bottom of 20 feet.

Injunction in 1865.

But in 1865, before this work had been actually commenced, an injunction was obtained by the Duke of Bedford against the Commissioners, prohibiting them from cutting through, lowering or removing a shoal or hard called Northey Gravel, or the shoal or hard immediately below or seaward of Dog-in-a-Doublet Sluice, or doing any other act which might prejudice, intercept, alter, vary, interfere with, control or affect the existing navigable river or canal between the River Nene and the town of Thorney, or the navigation thereof, or the supply of water from the River Nene for the purposes of navigation and irrigation at and through a sluice called the Dog-in-a-Doublet Sluice aforesaid.

Works since 1865.

Since the date of this injunction the river in the third division has practically been left to itself, no works of the least importance having been undertaken until last year, when dredging operations were commenced in Broadwater, and at the commencement of Smith's Leam.

These works, which have just been completed, have provided an additional depth of 15 ins. of water for a distance of 11 chains on one shoal 7 furlongs below Peter-

borough, and for a distance of 4 chains at another shoal 4 furlongs below Peterborough; and have, for a distance of 24 chains in Broadwater, and a little above Standground Sluice, lowered the bottom to give a depth of 4 ft. at all times, a thickness of between 3 ins. and 15 ins. of mud having been removed.

Diagram of Bottom of River.

I enclose with this report a diagram which I have had prepared to show the navigation from Peterborough to Bevis Hall; the bed of the river as it was shown in the plans deposited in 1852 being marked in red, the bed as surveyed in 1884 by the late Mr. Kingston, employed as engineer by the Commissioners, in black, the intended bottom, as provided for in the Act of 1852, by a straight red line, and the high water of a good spring tide by a straight blue line.

Condition of Bed of River.

The present state of the bed of Smith's Leam and the River Nene as far as Bevis Hall, and the position of the shoals and other obstructions to the navigation may be gathered from the following details, the depths of water given being at high water of a good spring tide :—

Just below the junction of Broadwater and Smith's Leam the bottom was 1 ft. 6 ins. above that shown on the section taken in 1852, and there was a depth of only 2 ft. 9 ins. of water, but some dredging operations just completed have increased this depth by 15 inches for a distance of 4 chains.

Seven furlongs below Peterborough Bridge the bottom was 2 ft. above that of 1852, and there was a shoal extending for about a furlong with a minimum depth of 2 ft. 9 ins. of water, but this depth has also been increased by 15 ins. by the recent dredging operations for a distance of 11 chains. At this point an old timber bridge (known as the New Bridge, and said to be private property), is a serious obstruction to the Channel. It has a centre span of 11 ft. 4 ins. and two side spans of 6 ft. and 8 ft., and just below it a deep hole has been scoured out.

From this bridge to about 1 mile 6 furlongs there is at no place more than 3 ft. 9 ins. of water, at some places only 3 ft., the bottom for the whole distance being above that of 1852.

From 1 mile 6 furlongs to 2 miles the bottom is mostly above that of 1852, and there are two shoals with a depth of only 3 ft. 9 ins. of water.

From 2 miles to 2 miles 5 furlongs the bottom is below that of 1852, and the depth of water varies from 3 ft. 9 ins. to 6 ft.

Northey Gravel.

On Northey Gravel, extending from 2 miles 5 furlongs to 3 miles 2 furlongs there are at many places only 2 ft. 9 ins. and 3 ft. of water, and for nearly the whole distance the bottom is shown in the sections to be above that of 1852, in places as much as 9 ins., but the highest point of the shoal shown in the section of 1884 is not more than $2\frac{1}{2}$ inches above the highest point shown in the section of 1852. As the surface of this shoal is composed of very hard gravel, and it is exposed to considerable scour, it is improbable that there has been much deposit of gravel upon it, the river being a silt-bearing one, and I should conclude that the condition of Northey Gravel is not very different from what it was in 1852.

From 3 miles 2 furlongs to 3 miles 4 furlongs the bottom is above that of 1852, the water deepening from 3 ft. 6 ins. to nearly 5 ft. 6 ins., but between 3 miles 4 furlongs and 3 miles 5 furlongs there is a bad shoal with only 3 ft. 9 ins. of water at one place, the bottom being 2 ft. above that of 1852.

From 3 miles 5 furlongs to 4 miles 4 furlongs the bottom is all above that of 1852, in some places over 1 ft., and the depth varies from 3 ft. to 4 ft. 6 ins., there being a bad shoal with a depth of from 3 ft. to 3 ft. 3 ins., extending from 3 miles 7 furlongs to 4 miles 1 furlong.

Dog-in-a Doublet.

From 4 miles 4 furlongs to Dog-in-a-Doublet sluice, at 5 miles 2 furlongs, the bottom is at some places above, and at others below, that of 1852, at two places being as much as 1 ft. above it, the depth varying from 4 ft. to 4 ft. 9 ins.

Just below Dog-in-a-Doublet there is a shoal with only 4 ft. of water, where the bottom is 1 ft., above that of 1852, being at the same level as the 1852 bottom a furlong higher up. Between 5 miles 2 furlongs and 5 miles 6 furlongs the bottom is everywhere above that of 1852 at depths of 4 ft. to 6 ft.

From 5 miles 6 furlongs to 6 miles 6 furlongs the bottom is mostly below that of 1852, the depth of water varying from 5 ft. 6 ins. to 6 ft. 6 ins.

Popeley's Gull.

From 6 miles 6 furlongs to 7 miles 5 furlongs the bottom is at some places above, and at some below, that of 1852, the shallowest places being at Popeley's Gull 6 miles 7 furlongs, where there are 5 ft. of water, and New-Comeover where there are 5 ft. 9 ins. of water.

From 7 miles 5 furlongs to 8 miles 7 furlongs the bottom is generally considerably below that of 1852, in places as much as 2 ft., and there is at no place a less depth of water than 6 ft., and for much of the distance a depth of from 8 ft. to 9 ft.

From 8 miles 7 furlongs to 9 miles 4 furlongs the bottom is mostly below that of 1852, and there is an average depth of 8 ft., but at 9 miles $4\frac{1}{2}$ furlongs there is a shoal with a depth of only 7 ft., with the bottom a foot above that of 1852, although at the same level as the 1852 bottom, a few yards lower down.

Cross Guns.

From 9 miles 4 furlongs to Cross Guns, at 9 miles $7\frac{1}{4}$ furlongs, the bottom is mostly below that of 1852, the depth of water at Cross Guns being 7 ft. 9 ins.

Below Cross Guns there is a bad shoal extending from 10 miles to 10 miles 2 furlongs with a minimum depth of water of 6 ft. 4 ins., and with the bottom at places nearly 2 ft. above that of 1852. On the shallowest part of this shoal, however, there is more water than there was in 1852.

Below 10 miles 2 furlongs the bottom is everywhere below that of 1852, in some places as much as from 6 ft. to 7 ft.

At several places, however, there are shallows, viz. :—

m.	f.		ft.	ins.
At 10	7	where there is a depth of water of	11	6
„ 11	$1\frac{3}{4}$	„ „	11	6
„ 11	$2\frac{3}{4}$	„ „	10	6
„ 11	$7\frac{1}{2}$	„ „	11	6
„ 12	1	„ „	12	6
„ 13	$4\frac{1}{2}$	(Guyhirn) „	13	0
„ 15	0	„ „	15	0
„ 15	3	„ „	14	0
„ 15	4	„ „	14	0
„ 15	$6\frac{1}{2}$	„ „	15	3
„ 16	2	(Waldersea Sluice) „	12	6

At dead low water there is very little water on many of these shallows, but, owing to the greater tidal range here than there is higher up the river the navigation is not much impeded.

Depth at Low Water Spring Tides, and at Neap Tides.

According to the levels given on Sir J. Coode's diagrams, the following amounts must be deducted from the depths given above to arrive at the depths at low water spring tides, and high and low water neap tides.

Distance from Peterborough.		Places.	Low Water Spring Tide.	High Water Neap Tide.	Low Water Neap Tide,
m.	f.		ft. ins.	ft. ins.	ft. ins.
0	0	Peterborough	0 $2\frac{1}{2}$	0 $2\frac{1}{2}$	0 $2\frac{1}{2}$
3	2	Northey Gravel	1 2	„ 1 4	1 4
5	2	Dog-in-a-Doublet	2 10	3 3	3 3
9	$7\frac{1}{2}$	Cross Guns	0 7	5 7	7 3
13	$1\frac{3}{4}$	Guyhirn	8 11	6 4	10 10

Proportionate amounts must be deducted at the intermediate points between the places named.

Above Dog-in-a-Doublet the depth of water available for navigation depends much more upon the amount of fresh water coming down the river, than upon the tides, and when the river is low barges can with difficulty get over the shoals at Dog-in-a-Doublet and Northey Gravel even at high tide, and it takes them at least two tides to do so.

River Banks.

The river between Peterborough and Bevis Hall and in Broadwater seems to have been, and said to have been, narrowed in places by the encroachment of the banks, but, as a general rule, these banks are in fairly good condition.

Conclusions.

As the result of my inspection I have to report :—

1. That the navigation between Bevis Hall and Peterborough is in a very unsatisfactory condition, so that barges and lighters trading between Wisbech and Peterborough, and using the most direct and exceedingly valuable waterway through Smith's Leam, are subjected to very great delays and difficulties, owing to the numerous shoals upon which there is an insufficient depth of water to float them under ordinary circumstances; one of these shoals, at Northey Gravel, being often impassable even at high water, unless a flush of fresh water is let down from higher up the river.

2. That, owing to the difficulty in navigating Smith's Leam, barges sometimes use the alternative and much longer route by Middle Level, on which an extra toll of 1*s.* 2*d.* per ton has to be paid, and which there would be no necessity to use if the natural channel to Peterborough were in a satisfactory state.

3. That it appears that, owing to no works of maintenance having been of recent years carried out, the navigation of the third division, for the first seven miles below Peterborough, has deteriorated, and will continue to deteriorate unless some such works are undertaken.

4. That if, under the injunction obtained in 1865, the Nene Navigation Commissioners have power to dredge the bed of Smith's Leam as deep as the bottom existing in 1852 (as I was informed they claim to have), the navigation might be considerably improved by such being done.

5. But that, as the depth of water even in 1852 was insufficient at Dog-in-a-Doublet, Northey Gravel, and many other places, the dredging only to the 1852 line would be quite inadequate to place the navigation in a thoroughly satisfactory state.

6. That, if the bed of Smith's Leam be deepened to such an extent as to give a sufficient depth of water all the way to Peterborough, it is certain that the salt water will run higher up the river, to a greater or less degree depending upon the amount of deepening, and that the important fresh-water rights of the Middle Level and the Duke of Bedford will be prejudiced. It should be mentioned that, since the completion of the Peterborough sewage works in 1880, the quality of the fresh water above Dog-in-a-Doublet has much improved.

7. That an examination of the river at various points during floods shows clearly that the drainage of the Nene Valley, as well as the navigation, would be much improved by the removal of the obstructions which now, to a great extent, hold up the flood-water.

This is further evidenced by a comparison of gaugings taken simultaneously at Peterborough, and at places lower down this river during flood times, which tend to show that there is sufficient capacity in the channel below Bevis Hall to take away the flood-water quicker than it can now get down from the upper reaches.

8. It is not within the scope of this report to show how the navigation might be improved without prejudicing the existing fresh-water rights, but it is sufficient to say that plans have been proposed to do so, either by the erection of a staunch and lock below Dog-in-a-Doublet Sluice, so as to maintain a head of fresh water, and so as to prevent the tide from running up to Peterborough, the Leam below Dog-in-a-Doublet being deepened, and the shoals above being also removed; or, in the event of the channel being so much deepened as to allow the salt water to run up to Peterborough, by providing for the fresh water being taken from some point higher up the river.

Either of those plans is feasible, but either would cost a considerable sum of money, the first-mentioned probably less than the other, and, although I was not instructed to make any inquiry as to the financial state of the Navigation Commission, I may mention that I was informed that the average annual amount of tolls (no doubt capable of being very largely increased by proper facilities for traffic being given) is at present about 600*l.*, one half of which is payable to the Corporation of Wisbech.

In conclusion I have much pleasure in stating that every possible assistance was given to me in the course of my inspection by all the persons concerned, my thanks being especially due to the Corporation of Peterborough for permitting me to make use of their Guildhall, and to avail myself of the valuable services of their surveyor.

I regret to say that the engineer of the Nene Navigation Commissioners, who kindly placed his plans and sections at my disposal, has died since I commenced my inspection.

I have, &c.

The Assistant Secretary,
Railway Department, Board of Trade.

F. A. MARINDIN,
Major, R.E.

Copies of the Report were sent to the Nene Navigation Commissioners (Third Division) and to the various parties interested on March 11, 1892.

Correspondence.

Sir, Wisbech, April 25, 1894.

R. 1365, 11th March 1892.

I am directed by the Chairman of these Commissioners to inform you that, in consequence of the Report to the Board of Trade prepared by Major Marindin, R.E., dated 6th February 1892, the Commissioners requested Mr. John Wolfe Barry, C.E., and Messrs. Coode, Son, and Matthews to advise them as to what works, if any, it would be desirable to carry out in the interests of the navigation, and I am further directed by the Chairman to forward to the Board of Trade the enclosed copy of the Report of Mr. Barry and Messrs. Coode, Son, and Matthews, since made by them to the Commissioners on the subject and dated 30th November last.

(Signed) Frd. Jackson,
Clerk to the Commissioners.

The Assistant Secretary,
Board of Trade (Railway Department).

Joint Report by Mr. J. Wolfe Barry and Messrs. Coode, Son, and Matthews, 30th November, 1893.

Sir, London, S.W., 30th November 1893.

With further reference to your letter of instructions, dated 26th July of last year, having now fully investigated the questions remitted to us for consideration, we beg to present the following Report, which we trust will be found to embody the information desired by your Commissioners on the several points upon which they requested our opinion.

Instructions.

2. We gather from the instructions that the Commissioners were desirous that we should examine into the Report to the Board of Trade prepared by Major Marindin, R.E., dated 6th February 1892, and keeping in view their limited powers, that we should advise them "as to what works, if any, it would be desirable to carry out in the "interests of the navigation." The instructions also particularly requested that we should consider whether Major Marindin's Report "correctly exhibits the present "condition of the bed of the river, and, if so, whether any of the alleged accretions "can with advantage to the navigation be removed, and also whether there would, or "would not, be any advantage in removing any accretions found to exist, but at "such a depth that there is, nevertheless, a sufficient depth of water over them for "navigation."

3. The instructions set out the position with such clearness, entering so fully into the circumstances which led up to the constitution of the Nene Navigation Commissioners, and describing their powers, that we have considered it desirable to annex, in full, your letter of 26th February, 1892, to be read in conjunction with this Report.

4. We ought also to notice here your supplementary letter of instructions, dated 3rd March last, in which you mention that in your former letter you did not refer to the Middle Level Commissioners and their right to take in fresh water from the River Nene at Standground Sluice. You state it is important that this should be borne in mind, and as affecting the question, you enclose a copy of a Resolution, passed by the Middle Level Board on 5th November 1885, bearing upon the level of the bed of the Broadwater as compared with that of the main channel of the Nene at the point of junction therewith.

Inspections.

5. As a first step in the investigation, we visited Peterborough on the 9th December last year, and there had an interview with the Chairman (Alderman Ford, of Wisbech), and Messrs. Lyster, Pearson, Little, and Laurance, members of the Committee formed for the purpose of conferring with us in this enquiry. Subsequently, accompanied by Mr. Lyster and Mr. Laurance, we inspected the Broadwater and that portion of the Nene which lies between Peterborough and Dog-in-a-Doublet Sluice. The Wash Lands were flooded, and the river was in a swollen condition.

6. On 23rd ultimo, accompanied by the Chairman and Mr. Little, we made a further inspection of the Nene between Guyhirn and Peterborough, and also the Broadwater and Standground Sluice. Mr. Lyster, in consequence of illness, was unable to attend. The water was low and the tide favourable, so that, taken in conjunction with our first visit, we may say that we have examined the river both in flood and drought.

Survey.

7. On the occasion of our first inspection it became evident that, in order properly to express an opinion upon the levels of the present bed of the River Nene and of the Broadwater, as compared with those of 1852, it would be necessary that a new set of sections should be taken over those portions of the river where the depths available for navigation are so restricted. Although there was every reason to believe that the sections prepared by the late Mr. Kingston in 1884 and 1885 were accurate, it was not clear that changes, independent of those resulting from the recent dredging, had not occurred in the interval which has elapsed.

8. We accordingly arranged with Mr. John Robinson, M. Inst. C.E., to prepare the requiste data, but in order that the work might be carried out as economically as possible, it was considered desirable to defer action until the spring of this year, when the condition of the river, following on a long period of dry weather, afforded a very favourable opportunity for proceeding.

9. Mr. Robinson, accompanied by two assistants, was accordingly occupied in the district of the Nene from the 4th to 17th May. Upon his return he completed the documents which he handed over to us in the early part of June.

Accompanying drawings.

10. This report is accompanied by six drawings, whereon the results of the recent survey by Mr. Robinson have been carefully plotted :—

Drawings Nos. 1 and *2* are joined Ordnance Sheets, at a scale of 25 inches to a mile, showing the River Nene and the lands, &c. adjacent thereto. Drawing No. 1 extends from Peterborough to Popeley's Gull, whilst No. 2 embraces from the last named point to Guyhirn.

Drawing No. 3 is a longitudinal section of the River Nene from Peterborough Bridge to 1½ mile below Cross Guns. The bed of the river in 1852, 1884, and 1893 is indicated on this section by red, black, and green lines respectively.

Drawing No. 4 is an enlarged longitudinal section of the River Nene at and in the vicinity of Northey Gravel, the bed in 1852, 1884, and 1893 being shown in lines of the same distinctive colours as in Drawing No. 3. Inasmuch as this sheet has been plotted with fuller detail, and at an enlarged scale, the changes of the river bed over that length to which the section is applicable can be more readily ascertained from it than from the smaller scale Drawing No. 3.

Drawing No. 5 gives a longitudinal and cross sections of the Broadwater, whereon are indicated the bed in 1852, 1885, and 1893.

Drawing No. 6 shows a series of cross sections of the Nene, taken in the positions indicated on Drawings 1 and 2, plotted from the data recently procured. We considered the information afforded by these sections would be useful for future reference.

Comparison of sections of 1884–1885 with those of 1893.

11. It will be observed from the drawings that the bed of the Nene, with the exception of about a furlong in length just above Fitzwilliam Bridge, at 1 mile below Peterborough (where certain dredging has been carried out), has undergone scarcely any change since 1884 between the junction with the Broadwater and Cross Guns, being a length of about 9 miles. Below Cross Guns, where it is soft and muddy, the bed is generally lower, and in one case is now as much as 4 feet below that of 1884; this occurs at a point immediately seaward of Cross Guns.

12. From Drawing No. 5 it will be seen that the bed of the Broadwater is, for a greater part of its length, from a few inches to 1 foot lower than in 1885. This arises from the dredging which has been carried out by the Nene Navigation Commissioners at a comparative recent date. No advantage whatever to the navigation has been afforded hitherto by this dredging, in consequence of a shoal having been left at 12 chains from the junction with the Nene, as shown on Drawing No. 5. The removal

of this shoal, which would only involve an expenditure of a few pounds, so as to bring the bed at this spot to the level of that of 1852, would increase the navigable depth in the Broadwater to the extent of 6 inches, but further improvement in this direction will not be practicable unless accompanied by a corresponding deepening in the Nene, which cannot be carried out in face of the injunction of 1865.

Injunction of 1865.

13. This injunction prohibits the Nene Navigation Commissioners from cutting through, lowering or removing, the shoal or hard called Northey Gravel, or the shoal or hard immediately below or seaward of Dog-in-a-Doublet Sluice, or doing any other act, whice may prejudice, interrupt, alter, vary, interfere with, control, or affect the existing navigable river or canal running between the River Nene and the town of Thorney, or the navigation thereof, or the supply of water from the said River Nene for the purposes of navigation and irrigation at and through Dog-in-a-Doublet Sluice.

Comparison of sections of 1852 with those of 1893.

14. Speaking generally, we may observe that from Peterborough Bridge to about three-quarters of a mile below Popeley's Gull the present bed of the river approximates very closely to that of 1852, with the exception that here and there the bed is in some cases higher and in others lower, the maximum variation being from 1 to 2 feet. From Popeley's Gull to Cross Guns the bed of the river at present is generally lower than in 1852 to the extent of from 1 to 3 feet, whilst below Cross Guns deepening has occurred since 1852 to the extent of from 1 to 5 feet.

15. The following Tables have been prepared with a view to show in a concise form the relative levels of the bed of the Nene and of the Broadwater respectively, in 1852 as compared with 1893, the heights above Nene Valley datum being given at the points where the comparisons have been made.

TABLE showing Levels, above Nene Valley Datum, of Bed of River Nene, between Peterborough Bridge and one-and-a-half mile below Cross Guns.

Distance below Peterborough Bridge.	Bed of 1852 above Nene Valley Datum.	Bed of 1893 above Nene Valley Datum.	Bed of 1852 *above* that of 1893.	Bed of 1852 *below* that of 1893.	REMARKS.
	ft. ins.	ft. ins.	ft. ins.	ft. ins.	
1 mile -	30 1	30 9	—	0 8	Shoal at 7 furlongs 3 chains above level of 1852 has been removed by dredging.
2 miles -	30 3	29 8	0 7	—	There is an accumulation 2 ft. in thickness at 1 mile 4½ furlongs, and a scour of 18 ins. at 2 miles 3 furlongs.
3 „ -	31 8	31 5	0 3	—	Northey Gravel.—The highest part of Northey Gravel in 1852 was 31 ft. 9 ins. above N.V.D., or 1 inch only below the highest part of the Gravel, as shown by the section recently taken.
4 „ -	30 10	31 9	—	0 11	¾ mile below Northey Gravel.
5 „ -	30 7	30 7	0 0	0 0	Between 4 miles and 5 miles the present bed varies from nothing to about 18 ins. above the bed of 1852. From 5 to 6 miles the two sections are practically the same.
6 „ -	29 0	29 0	0 0	0 0	At 6 miles 5 furlongs there is a scour of 18 ins. since 1852.
7 „ -	29 2	29 2	0 0	0 0	At 7 miles 4 furlongs there is a scour of 12 ins. since 1852, whilst at 8 miles there is a scour of 1 ft. 9 ins.
8 „ -	29 9	28 0	1 9	—	
9 „ -	28 9	28 3	0 6	—	
10 „ -	29 9	26 10	2 11	—	
11 „ -	26 8	25 4	1 4	—	There is a scour of 5 ft. in depth since 1852 at 10 miles 4½ furlongs.

TABLE showing the Levels, above Nene Valley Datum, of Bed of Broadwater in 1852, as compared with Bed in 1893.

Distance below Junction of Broadwater with River Nene.	Bed of 1852 above Nene Valley Datum.	Bed of 1893 above Nene Valley Datum.	Bed of 1852 *above* that of 1893.	Bed of 1852 *below* that of 1893.	REMARKS.
	ft. ins.	ft. ins.	ft. ins.	ft. ins.	
5 chains	30 11	30 9	0 2	—	Bed of river recently dredged 5 ins. at this spot.
12 „	30 11	31 5	—	0 6	No dredging executed at this spot.
19 „	30 3	30 3	0 0	0 0	Bed of river recently dredged 13 ins. at this spot *to the 1852 level.*
29 „	29 6	30 11	—	1 5	Bed of river recently dredged 5 ins. at this spot.
42 „	30 6	30 6	0 0	0 0	Bed of river recently dredged 9 ins. at this spot *to the 1852 level.*
47 „	31 3	31 0	0 3	—	Bed of river recently dredged 4 ins. at this spot.

18. We may observe that there is, generally, a remarkable similarity between all three sections, viz., 1852, 1884, and 1893, along the major portion of the river bed above Dog-in-a-Doublet, and particularly over Northey Gravel. Each section was intended to have been taken along the line of deepest water, a somewhat difficult position to determine unless the water is very low in the river. It may, therefore, very well be that some of the supposed differences in the bed of the Nene, as determined from a comparison of these three sections, are really due to slight deviations which have been unavoidable in making the observations.

Opinion on Major Marindin's Report.

19. The 3rd, 4th, and 5th paragraphs of the "Conclusion" on page 7 of the print of Major Marindin's Report, express his opinion with regard to the present condition of the navigation and the extent to which it appears to him improvement is practicable under existing conditions. These paragraphs are as follows :—

"3rd. That it appears that, owing to no works of maintenance having been, of recent years, carried out, the navigation of the third division, for the first 7 miles below Peterborough, has deteriorated, and will continue to deteriorate unless some such works are undertaken.

"4th. That if, under the injunction obtained in 1865, the Nene Navigation Commissioners have power to dredge the bed of Smith's Leam as deep as the bottom existing in 1852 (as I was informed they claim to have) the navigation might be considerably improved by such being done.

"5th. But that, as the depth of water even in 1852 was insufficient at Dog-in-a-Doublet, Northey Gravel, and many other places, the dredging only to the 1852 line would be quite inadequate to place the navigation in a thoroughly satisfactory state."

20. With reference to paragraph 3 of Major Marindin's "Conclusion" referred to above, the sections recently taken by Mr. Robinson for the purpose of this investigation enable us to express a very confident opinion that since 1884, the date of Mr. Kingston's section (which appears to have been most accurately and carefully taken) there has been no deterioration of the navigation either on the Nene between Peterborough and Cross Guns, or on the Broadwater, whilst below Cross Guns there has been an improvement in depth. This opinion is entirely outside the effect of the slight dredging works which have been recently executed.

21. In paragraph 4, quoted above, Major Marindin expresses the view that the navigation might be considerably improved by dredging the bed of Smith's Leam as deep as the bottom of 1852. We have explained under the last heading, and in the Tables given therewith, the extent of the differences which exist between the present bed and that of 1852. It will also be observed that Northey Gravel forms the principal or ruling obstruction, and that its present level conforms with that of 1852 and 1884 as nearly as three sets of carefully prepared observations may be expected to show. Moreover the top of this hard is of gravel and there are no indications of mud or other accretion, such as would have been observed had there been a growth there. We have therefore to express the opinion, after very carefully examining the sections

and the extent and configuration of such slight accretions as are shown above the bed of 1852, that no practical benefit would be afforded to the navigation were the bed of Smith's Leam dredged, where necessary, to bring it to the bed of 1852, *so long as Northey Gravel remains at its present level.*

22. With reference to the 5th paragraph in Major Marindin's "Conclusion," we entirely endorse the view he expresses that dredging only to the 1852 line would be quite inadequate to place the navigation in a satisfactory condition.

General opinion with regard to improvement of the navigation.

23. Major Marindin has referred in his Report to the difficulties under which the navigation is now carried on. He has described the alternate route between Wisbech and Peterborough viâ Outwell, March, and Standground, a distance of 34 miles, as compared with 19 miles by Smith's Leam. He has also alluded to the additional tolls which have to be paid in connexion with the longer route, viz., 1*s.* 2*d.* per ton, in addition to 6*d.* per ton which is paid to the Nene Navigation Commissioners, whether the entire direct course is used, or only the short length from Standground Sluice to Peterborough. It would also appear that the time occupied on the journey by Wisbech Canal, &c. is from two to three days, while, when there is sufficient water, the journey of 19 miles by Smith's Leam can be performed in nine hours.

24. Major Marindin also points out that if the bed of Smith's Leam be deepened to such an extent as to give a sufficient depth of water for the navigation all the way to Peterborough, "it is certain that the salt water will run higher up the river, to a "greater or less degree, depending upon the amount of deepening, and that the "important freshwater rights of the Middle Level and the Duke of Bedford will be "prejudiced"

25. We entirely endorse Major Marindin's views and remarks, as expressed in the two last-named paragraphs, nor is the remedy for these inconveniences and drawbacks difficult to devise. It would be perfectly feasible to construct works at a suitable point below Dog-in-a-Doublet, which, whilst ensuring the maintenance of the freshwater rights, both to Thorney and the Middle Level, would at the same time admit of the lowering of Northey Gravel and the creation of a suitable navigable channel to Peterborough. Moreover, not only would these two interests be thereby reconciled, which have hitherto, from existing conditions, been antagonistic, but inland drainage would also be benefited by the provision of an improved channel for flood discharge, inasmuch as the impounding works would be so designed as to provide, when requisite, an unobstructed waterway.

26. The expenditure required for the execution of such works as are necessary to effect the foregoing objects would not be great when compared with the advantages which would be derived from them, and the cost should be borne by the parties benefited, it being obvious from what we have said above, that the main purpose to be served would be the improvement of the navigation. Parliamentary sanction would have to be obtained.

27. Projects on somewhat similar lines to the above have from time to time been propounded, in fact Major Marindin refers to such, in paragraph 8 of his "Conclusions." We are, however, of opinion that a more suitable project than any of those hitherto put forward could now be devised should the necessary opportunity arise for securing joint action of the parties interested, a most important factor where the conditions are so complex and some of the rights so important.

28. Until the time arrives for dealing with the matter on a comprehensive plan, we are of opinion that it will not be advisable to further resort to dredging with the exception of the removal of the small patch in the bed of the Broadwater to which we have referred. Until Northey Gravel can be lowered no benefit of any practical moment can be afforded to the navigation, and this lowering cannot be effected without prejudicing, in a material degree, the freshwater rights of His Grace the Duke of Bedford and the Middle Level, unless the works to which we have referred are constructed below Dog-in-a-Doublet Sluice.

29. The Commissioners need be under no apprehension as to the further deterioration of the navigation, seeing that practically no change in the river bed has occurred above Cross Guns during the nine years interval between 1884 and 1893, other than that caused by the recent insignificant dredging.

Fitzwilliam Bridge.

30. We concur in the views expressed by Major Marindin with regard to the serious obstruction caused by the old timber work, which we were informed is known as the Fitzwilliam Bridge. We are not aware if the Commissioners have power to deal with

this obstruction, if so, it would appear to be a matter which might well be taken in hand with advantage to the navigation and to flood discharge.

We are, Sir,

Your obedient Servants,

J. Wolfe Barry.

Coode, Son, and Matthews.

Francis Jackson, Esq.,
Clerk to the Nene Navigation Commissioners
(Third Division).

Nene Navigation Commissioners.

(Third Division.)

Dear Sirs, Wisbech, July 26, 1892.

At the Annual Meeting of the above-named Commissioners, held at Wisbech on the 28th day of April last, the following Resolutions were passed :—

" The Clerk laid before this Meeting a letter from the Board of Trade dated " the 11th March last, enclosing Copies of the Report (dated 6th February last) " of Major F. A. Marindin, R.E., on this Navigation, under the Railway and " Canal Traffic Act, 1888, section 41 ; and the said Report having been con- " sidered : —

" Resolved that Mr. Wolfe Barry and Messrs. Coode, Son, & Matthews, be " requested to examine into Major Marindin's Report, and seeing the extremely " limited power of the Commissioners, to advise as to what works, if any, it would " be desirable to carry out in the interest of the Navigation, and that a Com- " mittee, consisting of five Commissioners, be formed for the purpose of waiting " upon Messrs. Barry and Coode, and for giving them such directions, from time " to time, as they may think necessary."

" Resolved that a Committee be appointed for carrying into effect the above " Resolution, and that it consist of the Chairman and Messrs. Lyster, Pearson, " Little, and Laurance."

The Committee appointed as above have since met, and have instructed me to request that you will be so good as to examine the Report of Major Marindin above referred to, which, you will observe, is based upon the sections of the river made by the late Mr. John Kingston in 1884, and, having done this, to advise the Commissioners (with full regard to the several Acts of Parliament relating to the subject, and governing the proceedings of the Commissioners in this respect) what works (if any) it is legally competent, and would be advisable, for the Commissioners, with the small means at their disposal for that purpose, to carry out in the interests of the Navigation.

A copy of the Nene Valley Drainage and Navigation Improvement Act, 1852, accompanies these instructions, by which it will be seen that very extensive works under it were contemplated to be executed in and affecting the river between Peterborough and Wisbech by the Incorporated Commissioners therein referred to, and by section 105 certain Navigation Tolls were granted in the Third Navigation Division, comprising that part of the river. An amending Act was passed in 1854, principally to raise additional contributions, and not otherwise affecting the contemplated works. Some works of dredging were done in the river in the Third Division, under the Act of 1852, but the principal part of the work thereby contemplated was not done.

The works being in this unfinished state and the Incorporated Commissioners having incurred debts beyond the means provided by the Acts of 1852 and 1854, the Nene Valley Act, 1862, a copy of which accompanies these instructions, was passed.

By this last Act authority was given to raise the sum necessary for discharging the liabilities of the Incorporated Commissioners and the Incorporated Commission was (by Section 36) from and after the 30th September 1862 absolutely dissolved.

From that time, therefore, there existed no power to carry on and complete the works originally proposed under the Act of 1852, and the Act of 1862 expressly provides (in section 47) that upon the dissolution of the Commission all the provisions of the Act of 1852, the Act of 1854, and that Act, which impose any obligations, duties, or liabilities, upon the Incorporated Commissioners in the Third District (which includes the Third Navigation Division) should cease and determine.

By the same Act of 1862 (section 57) a new Commission was formed under the style of The Nene Navigation Commissioners (Third Division) from whom these instructions emanate.

By section 61 of the Act of 1862, all the powers, jurisdiction, and authority of the Incorporated Commissioners conferred on them by the Act of 1852 and the Act of 1854, with reference to and within the Third Navigation Division, and all Navigation tolls, dues, and sums of money which could have been received and levied by the Incorporated Commissioners for, and in respect of the Navigation of the River in the Third Navigation Division, if the dissolution of the Commission had not taken place, were, upon the dissolution of the Commission, transferred to, and became vested in the Navigation Commissioners, and it was enacted that such Navigation Commissioners shall have and may exercise all such powers, jurisdiction, and authority, with reference to the maintenance, superintendence, and conservancy of the Navigation in the Third Navigation Division and the works thereof, and the levying of tolls and duties therein, or in respect thereof, in the same manner as if they had been expressly authorised and appointed by the Act of 1852 and the Act of 1854, for those purposes instead of the Incorporated Commissioners.

It must be observed that the purposes are the maintenance, superintendence, and conservancy of the Navigation, and that the word improvement does not occur in the Act. It was, in fact, inserted in the Bill, but was struck out in Committee. That no work of improvement beyond simple maintenance and conservancy was intended to be authorised will be more clearly seen by reference to the injunction hereinafter referred to.

The next section (62) provides for the application of the Navigation tolls, after payment of the cost of collection as follows, viz.:

One half to the Treasurer of the Corporation of Wisbech.

The other half to be retained by the Navigation Commissioners who are to apply it:—

1. In payment of the general expenses of management.
2. Towards the maintenance and conservancy of the navigation of the river in the Third Navigation Division.
3. If there be any surplus the same to be paid to the Treasurer of the Corporation of Wisbech.

A copy of the Report of Major Marindin, above referred to, accompanies these instructions. From this it will be seen that various parts of the bed of the river between Peterborough and Bevis Hall, are represented to be higher than they were in 1852 (which is understood to be the latest date, prior to the passing of the Act of 1862, at which any sections of the river showing its depth throughout that distance were taken), and that in some of these parts these alleged accretions have diminished the navigable depth of water very considerably.

It is particularly requested that you will consider whether this Report correctly exhibits the present condition of the bed of the river, and if so, whether any of the alleged accretions can with advantage to the Navigation be removed, and also whether there would, or would not, be any advantage in removing any accretions found to exist, but at such a depth that there is nevertheless a sufficient depth of water over them for navigation. With reference to the extent and nature of the work (if any) which you may think it expedient should be executed, the provisions of the Acts of Parliament above referred to must be borne in mind, the legal effect of which provisions, as interpreted by the Court of Chancery, is defined in the injunction obtained in 1865 referred to in Major Marindin's Report, and for your information in this respect a copy of the restraining part of this injunction accompanies these instructions.

The Commissioners feel bound and are most desirous to execute every proper work and duty within their pecuniary means (which, however, are very limited), but with strict regard to the provisions of the before mentioned Acts, and obedience to the injunction; and they request your report and advice on these matters with due regard to the several considerations herein expressed, and they will be glad if you will at the same time give them some idea of the probable cost of any works you may consider they are authorised to execute, which would be expedient, and would be advantageous to the Navigation.

It should be understood by you that the Commissioners have from time to time taken the advice of the late Mr. John Kingston, a local engineer, and from the following quotation from his Report, dated August 1886, placed in juxtaposition with

an extract from Major Marindin's Report, it will be seen that there was a complete difference between their views.

From Major Marindin's Report.

Page 7, paragraph 4.—That, if under the injunction obtained in 1865, the Nene Navigation Commissioners have power to dredge the bed of Smith's Leam as deep as the bottom existing in 1852 (as I was informed they claim to have) the Navigation might be considerably improved by such being done.

From Mr. Kingston's Report.

Page 2, last paragraph.—Seeing, therefore, the small amount of benefit or improvement that would accrue to the navigation by dredging to the extent permissible, and the almost insuperable difficulties which stand in the way of the execution of the works, and the danger that would be incurred of violating the restrictions imposed by the Chancery injunction, I am driven to the conclusion that it would be wise to abandon the proposed dredging scheme, and to accept as unavoidable the position in which you are placed, and in which you are powerless to effect any improvement in the channel of the river to any appreciable extent for navigation purposes whilst the Chancery injunction aforesaid is in force.

The Commissioners, acting on Mr. Kingston's advice, have only executed certain minor works since recommended by him; and being now placed in the position of having two conflicting opinions expressed in Mr. Kingston's Reports on the one hand and Major Marindin's Report on the other, are desirous of your advice as to the best possible course for them to adopt under the circumstances, strictly confining yourselves to the existing legal powers vested in them.

I remain, &c.

(Signed) Fra. Jackson,
Clerk to the Nene Navigation Commissioners (Third Division)
and by their Order.

John Wolfe Barry, Esq., C.E.,
and
Messrs. Coode, Son, & Matthews, C.E.'s.

Board of Trade, (Railway Department),
7, Whitehall Gardens, London, S.W.,
May 8, 1894.

Sir,

With reference to your letter of the 25th ultimo, forwarding a printed copy of the Joint Report by Mr. J. Wolfe Barry and Messrs. Coode, Son, & Matthews, upon the Nene Navigation (Third Division), I am directed by the Board of Trade to request that you will be good enough to inform them what action the Commissioners have taken or propose to take upon the Report.

I am to add that the Board of Trade may consider it desirable to present the Report with Major Marindin's Report, and any correspondence thereon, to Parliament.

I am, &c.

The Clerk to the
Nene Navigation Commissioners
(Third Division), Wisbech.

(Signed) A. D. Berrington.

Wisbech, May 19, 1894.

Sir,

In reply to your letter No. R. 4899, dated 8th May instant, I am directed by the Nene Navigation Commissioners (Third Division) to inform you that they have passed a resolution adopting the Joint Report of Mr. J. Wolfe Barry and Messrs. Coode, Son, and Matthews, upon the Nene Navigation (Third Division), and that they intend, as soon as practicable, to remove the shoal in Broadwater therein referred to.

The Commissioners do not think it possible for them to take any steps for carrying out the work suggested in paragraphs 25 and 26 of the Report, inasmuch as they have no funds which they could employ for obtaining the necessary sanction of Parliament nor any sufficient funds for executing the work if authorised.

I am, &c.

(Signed) FRA. JACKSON,
Clerk to the Nene Navigation Commissioners
(Third Division).

The Assistant Secretary
(Railway Department),
Board of Trade, 7, Whitehall Gardens,
London, S.W.

COURTENAY BOYLE,
Secretary.

Board of Trade,
Whitehall Gardens, S.W.
June, 1894.

GENERAL REPORT

OF THE BOARD OF TRADE

UPON THE

ACCIDENTS

THAT HAVE OCCURRED ON

THE

RAILWAYS OF THE UNITED KINGDOM

During the Year 1893.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

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TABLE OF CONTENTS.

	Page
Report	3
Total number of Passengers and Servants killed and injured, and the proportion of passengers to the number of passenger journeys	3
Accidents inquired into	6
Due to Permanent Way, Works, &c.	6
Due to Failures of Machinery of trains, boiler explosions, &c.	8
Due to use of too great speed	8
Collisions between following trains (outside fixed signals)	9
Collisions at junctions	9
Collisions within fixed signals	10
Trains wrongly turned into sidings	13
Accidents on inclines	13
Miscellaneous Accidents	14
Summary of the Causes	15
Accidents generally, to Servants of Railway Companies	16
Absolute Block and Interlocking Systems	18
Level Crossings	18
Continuous Brakes	18
General Remarks	19
Appendix No. 1.—Abstract of Accidents	21
„ No. 2.—Classified List of Accidents	22

REPORT, &c.

TO THE SECRETARY, BOARD OF TRADE.

SIR,

I HAVE the honour to present to the Board of Trade a general Report on the accidents that have occurred in the working of the railways of the United Kingdom during the year 1893, founded principally on returns made by the railway companies under the Regulation of Railways Act 34 & 35 Vict. c. 78. s. 6, and on reports upon certain accidents and collisions, made after inquiry by Officers of this Department.

Total killed and injured from all Causes in the working of Railways.

The following table shows the number of persons reported to the Board of Trade as having been killed and injured from all causes in the working of railways during the year.

It must be remembered that under the head of injuries in the case both of passengers and servants of the Companies all injuries, however slight, are included.

	Killed.	Injured.
PASSENGERS:		
From accidents to trains, rolling stock, permanent way, &c.	17	484
By accidents from other causes, including accidents from their own want of caution or misconduct	89	737
SERVANTS OF COMPANIES OR CONTRACTORS*:		
From accidents to trains, rolling stock, permanent way, &c.	10	73
By accidents from other causes, including accidents from their own want of caution or misconduct	450	2,558
OTHER PERSONS:		
Whilst passing over railways at level crossings	55	30
Trespassers	274	135
Suicides	86	—
Miscellaneous, not included in either of the above	30	92
Total	1,011	4,109

* Of contractors' servants 14 were killed and 15 injured.

In addition to the above, the Companies have returned 80 persons killed and 4,687 injured from accidents that occurred on their premises but were not connected with the movement of railway vehicles.

Proportion of Passengers killed and injured from all Causes in the working of Railways.

The total number of passenger-journeys, exclusive of journeys by season-ticket holders, was 873,177,052 for the year 1893, or 8,741,664 more than in the previous year. Calculated on these figures, the proportions of passengers killed and injured during the year 1893, *from all causes*, were 1 in 8,237,519 killed, and 1 in 715,132 injured.

In 1892, the proportions were 1 in 6,701,049 killed, and 1 in 641,272 injured.

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Proportion of Passengers killed and injured from Causes beyond their own control.

The following statement shows the proportion of passengers returned as killed and injured from causes beyond their own control, in passenger-journeys, for the years 1874 to 1893 :—

Year.	Number of Passengers Killed and Injured from causes beyond their own control, from Accidents to Trains.		Number of Passenger Journeys (exclusive of Journeys by Season-ticket Holders).	Proportion returned as Killed and Injured (from causes beyond their own control) to number carried.	
	Killed.	Injured.		Killed.	Injured.
1874	86	1,613	477,840,411	1 in 5,556,284	1 in 296,243
1875	17	1,212	506,975,234	1 in 29,882,073	1 in 418,296
1876	38	1,279	538,287,295	1 in 14,165,455	1 in 420,865
1877	11	664	551,593,654	1 in 50,144,876	1 in 830,713
1878	24	1,173	565,024,455	1 in 23,542,685	1 in 481,692
1879	75*	602	562,732,890	1 in 7,503,105	1 in 934,772
1880	29	904	603,885,025	1 in 20,823,586	1 in 668,013
1881	23	987	622,160,000	1 in 27,050,435	1 in 630,354
1882	18	803	654,838,295	1 in 36,379,905	1 in 815,489
1883	11	662	683,718,137	1 in 62,156,194	1 in 1,032,806
1884	31	864	694,991,860	1 in 22,419,092	1 in 804,388
1885	6	436	697,213,031	1 in 116,202,171	1 in 1,599,112
1886	8	615	725,584,390	1 in 90,698,049	1 in 1,179,812
1887	25	538	733,670,000	1 in 29,346,800	1 in 1,363,699
1888	11	594	742,499,164	1 in 67,530,000	1 in 1,250,555
1889	88†	1,016†	775,183,073	1 in 8,808,875	1 in 762,975
1890	18	496	817,744,046	1 in 45,430,224	1 in 1,648,677
1891	5	875	845,463,668	1 in 169,092,733	1 in 966,244
1892	21	601	864,435,388	1 in 41,163,589	1 in 1,438,328
1893	17	484	873,177,052	1 in 51,363,356	1 in 1,804,084

* Including 73 persons lost in the Tay Bridge disaster.
† Including 80 killed and 262 injured in collision near Armagh.
Number of season tickets issued in 1893, 1,574,876.

Inquiries into Accidents.

Comparative Statement of the Number of Train Accidents inquired into during the years 1875 to 1893, inclusive.

1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
161	149	146	108	100	118	111	118	94	105	60	62	58	61	69	53	68	48	46

Three train accidents, which were inquired into, were attended with fatal results to passengers, viz. :—

An accident to a passenger train which left the rails near Llantrissant Junction on the Taff Vale Railway, by which 12 passengers and 1 other person were killed; and 7 passengers and 5 Company's servants injured. (*See* page 8.)

An accident to a passenger train which left the rails near Poulton-le-Fylde on the Preston and Wyre Railway by which 2 passengers and 1 Company's servant were killed and 42 passengers were injured. (*See* page 7.)

An accident to a passenger train which ran through a gate of a level-crossing at Erith from the effect of which a passenger subsequently died. (*See* page 8.)

Four train accidents, which were inquired into, other than the above were attended with fatal results to Companies' servants, viz.:—

An accident to a mixed train, which left the rails at Carraduff Viaduct on the Tralee and Dingle Railway by which 3 Company's servants were killed, and 13 passengers were injured. (*See* page 13.)

A collision between a mixed train and some waggons at Drummuir Station on the Great North of Scotland Railway in which 1 Company's servant was killed, and 3 passengers were slightly injured. (*See* page 13.)

An accident to a passenger train which came into contact with a portable crane, the jib of which had swung foul of the main line at Willaston Station on the London and North-Western Railway, causing the death of 1 Company's servant, and injury to 3 passengers. (*See* page 7.)

An accident to a passenger train, 2 carriages of which were thrown off the line by a mass of earth which slipped down the slope by the side of the Midland railway at Ynisygeinon Junction, causing the death of 1 Company's servant and injuring 5 passengers, 2 of whom were Company's servants. (*See* page 7.)

Further details respecting these accidents are given at the pages of the Report specified in each case.

In addition to the train accidents inquired into, inquiries were also held in the following cases of personal accidents, viz.:—

A fatal accident to a man who was attempting to cross the line of the Lancashire and Yorkshire Railway at Rayner's Lane level-crossing and was knocked down by a passing train.

A fatal accident to a bank-rider at the Waldridge incline on the North-Eastern Railway, who was pulled violently by the wire rope attached to the waggons against one of the waggons upon which he had just ridden up the incline.

The inquiries into train-accidents classified under certain heads for the past year and for each of the preceding twelve years are given in the following table for the purpose of comparison.

Class of Accident.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
A. From engines or vehicles meeting with obstructions, or leaving the rails in consequence of obstructions, or from defects in connection with the permanent way or works	24	14	12	21	7	7	11	10	11	5	6	6	10
B. From boiler explosions, failures of axles, wheels, or tyres, or from other defects in the rolling stock	6	12	7	9	6	8	1	7	6	4	4	4	3
C. From trains entering stations at too great speed	5	8	12	11	4	4	10	7	12	2	15	10	8
D. From collisions between engines and trains following one another on the same line of rails, excepting at junctions, stations, or sidings	9	6	3	3	2	—	3	2	1	2	3	2	1
E. From collisions at junctions	13	8	8	10	8	10	2	4	4	7	4	5	3
F. From collisions within fixed signals at stations or sidings	36	48	44	40	24	25	22	16	25	24	25	15	17
G. From collisions between engines or trains meeting in opposite directions	3	4	—	—	—	1	6	8	2	2	3	—	—
H. From collisions at level-crossings of two railways	—	—	—	—	—	—	—	—	—	—	—	—	—
I. From engines or trains being wrongly run or turned into sidings, or otherwise through facing points	9	12	6	11	7	4	3	4	4	5	4	5	1
J. On inclines	6	—	2	—	2	3	—	1	4	2	4	—	1
K. From trains on fire	—	1	—	—	—	—	—	—	—	—	—	—	—
L. Miscellaneous	—	5	—	—	—	—	—	2	—	—	—	1	2
Total	111	118	94	105	60	62	58	61	69	53	68	48	46

The number of passengers and servants of companies killed and injured, in the train-accidents inquired into during the year 1893, classified in the same way, are given in the following table :—

Class of Accident.	Number of Accidents.	Passengers and others		Servants of the Company	
		Killed.	Injured.	Killed.	Injured.
A. From engines or vehicles meeting with obstructions, or leaving the rails, in consequence of obstructions, or from defects in connection with the permanent-way or works	10	3	69	3	4
B. From boiler explosions, failures of axles, wheels, or tyres, or from other defects in the rolling stock	3	13	9	—	5
C. From trains entering stations at too great speed	8	—	84	—	3
D. From collisions between engines and trains following one another on the same line of rails, excepting at junctions, stations, or sidings	1	—	6	—	—
E. From collisions at junctions	3	—	7	—	1
F. From collisions within fixed signals at stations or sidings	17	—	160	—	9
G. From collisions between engines or trains meeting in opposite directions	—	—	—	—	—
H. From collisions at level-crossings of two railways	—	—	—	—	—
I. From engines or trains being wrongly run or turned into sidings, or otherwise through facing points	1	—	3	1	—
J. On inclines	1	—	13	3	—
K. Trains on fire	—	—	—	—	—
L. Miscellaneous	2	—	3	—	2
Total	46	16	354	7	24

Train-accidents.

A.—*Accidents from Engines and Vehicles meeting with Obstructions or leaving the Rails in consequence of obstructions or from Defects in connection with the Permanent Way or Works.*

Ten accidents in this class, resulting in the death of 3 passengers and 3 servants and injury to 69 passengers and 4 servants, were investigated.

Four were due to mistakes and negligence of the companies' servants ; three to work in progress on the permanent-way ; one to a landslip caused by heavy rains ; one to a horse straying on to the line ; and one to an error of judgment of the driver in maintaining too high a speed when running round a sharp curve.

Great Western :

September 16th.—A down express train from London for Exeter ran off the line in the Box tunnel, between Chippenham and Bath, fouling the up main line, and almost immediately afterwards, being run into by an up passenger train from Bristol for Chippenham. 9 passengers, 2 Company's servants, travelling as passengers, and the driver and fireman of the up train were injured.

The cause of the accident to the down express train, which led to the collision, was involved in a good deal of uncertainty, but the Inspecting Officer was disposed to attribute it to the engine having first bent the line inwards, thereby creating an irregular curve and causing the wheels to mount the inner rail. He considered that no blame attached to any of the servants of the Company with regard to the collision.

The Inspecting Officer was of opinion that it was not a judicious act on the part of the district inspector of permanent-way, to recommend the removal of the restriction of speed (which had been in force during the relaying operations) before the down line had been fully ballasted, which it certainly was not in the locality of the accident. The necessity for full ballasting was more particularly necessary in consideration of the long falling gradient, on which very high speeds were sure to be attained, and the fact that the engine drawing the down express train was one of a class which were known, when running at high speeds, to exert a severe strain on the line.

Highland :

July 18th.—As the second portion of the 11.25 a.m. down mail train from Inverness was entering Dingwall station, the fifth vehicle in the train, a London and North Western bogie saloon carriage, left the rails and was followed by the eight vehicles next behind it. No person was injured. The part of the line where the accident occurred was under repair at the time.

The Inspecting Officer was of opinion that this slight accident was due to want of care on the part of the person in charge of the work of re-sleepering, who ought either to have deferred the removal of the spikes from the chairs under the stock-rails of the points until after the train had passed, or, having removed them, to have taken the proper steps to caution drivers to reduce speed before entering the station.

LONDON AND NORTH-WESTERN:

April 12th.—As a Great Western Company's up passenger train was running through Willaston station, first the engine and then the rear portion of the train came into collision with the jib and balance of a portable crane, the jib of the crane having, during shunting operations (owing to its not being properly secured), swung round foul of the up line just as the passenger train was approaching. Three passengers were injured, and the Willaston station-master, who was in charge of the crane at the time, was struck by the balance-box of the crane and killed on the spot.

The Inspecting Officer found that this accident was due to the neglect of an important rule in connection with the movement of portable cranes, which provides that, before a crane is attached to a goods train, care should be taken that all the fastenings for the purpose of securing the jib and balance-box in their proper position during transit are in good condition and applied. He considered that the Railway Companies would do well to call the attention of their servants to the necessity of using the pins for preventing the movement of the balance-box when the trains are being moved in shunting operations as well as when they are being transported from station to station.

He also drew attention to the fact of the automatic brake of the Great Western Company's passenger train not applying to the engine and tender, which was a non-compliance with the order made on this Company on the 26th November 1890 under the Regulation of Railways Act of 1889.

MANCHESTER SOUTH JUNCTION AND ALTRINCHAM:

December 1st.—A ballast engine with van attached ran through the gates of a public road level-crossing near Altrincham station. A woman, who was passing over the crossing at the time, was injured.

The Inspecting Officer found that this accident was due to a misunderstanding between the driver and guard, and to negligence on the part of the driver and fireman.

He considered that as there was a strong feeling on the part of the local authorities in favour of the substitution of a bridge for the crossing, and as the joint Companies had shown recently, by a Bill promoted by one of them, a desire to effect this substitution, that it was a case in which the work should be undertaken by the combined action of the Road and Local Authorities and the Railway Companies. Failing this arrangement he recommended the construction of a subway to relieve some of the traffic at the crossing.

MIDLAND:

August 1st.—A passenger train from Bristol to the North was running through Wickwar tunnel, when the leading wheels of the second vehicle from the engine and all the wheels of the seventh and eighth vehicles left the rails. Three passengers subsequently complained of having been slightly shaken.

The Inspecting Officer was of opinion that the accident was due to the want of top ballast at the place where the vehicles left the rails, the line at this spot being under process of relaying, so that the sleepers, which were merely resting on the bottom ballast, were able to move laterally when subjected to pressure from the oscillation of a heavy train. He considered it most unwise of the inspector in charge of the work to have withdrawn the flagman before the line was provided with top ballast and the ends of the sleepers so boxed up that no lateral movement could take place; and that the most serious aspect of the case was that the action of the inspector seemed to have been in accordance with the regular practice on the western district of the Midland Railway.

MIDLAND:

December 12th.—As a passenger train from Brynamman to Swansea was passing Ynisygeinon junction, the line was suddenly covered by a mass of earth sliding down from the slope on the left side of the railway, and the two rear carriages were thrown off the rails, the rear carriage, a bogie brake carriage, being upset on to the wall of an old mine-shaft on the right side of the line.

The guard of the train was fatally injured by some heavy luggage falling upon him; and five passengers—two of whom were servants of the Company—were injured.

The inspecting officer found that the cause of the land-slip was the very heavy rainfall, which had lasted for nearly nine hours, and during which there was so much water running down the hillside that a small watercourse overflowed, and the water, instead of discharging entirely into a drain, ran into a small cup-shaped depression, in which the earth became so saturated that it eventually slipped down the hillside.

He recommended that the Company should lose no time in making a critical examination of the slopes on the side of the line, trimming them and thoroughly draining them where necessary, and that the three watercourses flowing into the drain above referred to should be attended to so as not to be liable to overflow down the hillside.

NORTH-EASTERN:

November 6th.—An express train from Bridlington to Leeds, on passing Everingham came into collision with the balance-box of a travelling crane which was being used in an adjacent siding for loading timber into a railway truck. No passengers or servants of the Company received any injury.

The inspecting officer found that this collision was due to (I) non-observance of the rules and instructions applying to the use of travelling cranes, no intimation having been given to the station-master that the work of timber loading was going on, and (II) the train having been accepted while the crane was foul of the main line.

He called attention to the unsatisfactory conditions under which a porter was being trained as a signalman at the station, and suggested that the Company should issue some instructions as to blocking back to the signal-cabin in rear when the line through a station is obstructed by a travelling crane or in other ways.

NORTH-EASTERN:

November 27th.—A Lancashire and Yorkshire Company's express train from Manchester to York, while passing through Ulleskelf station at a speed of about 60 miles an hour, ran over a horse which had strayed on to the railway, and was standing between the outer rail of the down line, and the gates of a level-crossing. The horse became entangled in the wheels of the train, and two vehicles being forced off the rails, the body of one of them became separated from the under-frame, and was turned over on to its side, the frame remaining upright.

Six passengers complained of injury, but in no case were their injuries serious.

The Inspecting Officer found that the horse gained access to the line through the goods yard gate, and that no carelessness or neglect could be attributed to the North-Eastern Company's servants, two of whom did all in their power to avert the accident when they became aware of the impending danger.

He also called attention to the desirability of adopting every possible precaution to ensure that goods-yard gates should remain closed except when opened for the purpose of business.

PRESTON AND WYNE JOINT.

July 1st.—A London and North-Western Company's train from Blackpool for Stockport, while running round a sharp curve just before reaching Poulton-le-Fylde station left the rails. Two passengers and the driver were killed on the spot, and 42 passengers complained of injuries more or less serious.

The Inspecting Officer found that this accident was mainly caused by too high a rate of speed on a sharp curve; but other contributory causes were the length of the engine, the irregularity and tight gauge of the curve, and the worn state of the outer rails. The high rate of speed at which the train was running must be attributed to the fact that the deceased driver, not being well acquainted with this part of the line, and having a light train of only four vehicles, had reached the curve before he was aware of it.

Parliamentary powers have since been obtained for making a new station at Poulton, and getting rid of the objectionable level-crossing at this station and the curve on which the accident took place, and the Inspecting Officer recommended that no unnecessary time should be lost before carrying out the work. In the meantime he recommended the erection of speed boards limiting the speed round the curve to six miles an hour; the fixing of the junction up home-signal at the commencement of the curve, and the stopping of all up trains at this signal, and of all down trains at the station, in order to ensure a slow speed over the level-crossing at the station (the high speed over this crossing being a subject of complaint by the inhabitants); the making of the radius of the curve more uniform; the increase of the gauge, and the renewal of the outer rails.

In conclusion he recommended the London and North-Western Company to insert a rule in the working time-table limiting the speed at this curve.

South-Eastern:

May 5th.—A down passenger train from Charing Cross for Dartford ran through one of the gates at the Erith Lower Road level-crossing. A passenger subsequently died from the effect of the shock.

The Inspecting Officer found that this accident was primarily due to the negligence of the gatekeeper, who had neglected to close the gates across the highway after a vehicle had passed about half an hour before the accident. This man stated that he could neither read nor write, and was not therefore a fit person to be placed in charge of a level-crossing, especially as the rules relating to his duties, a copy of which was in his box, did not appear to have been explained to him. The driver of the train could not have been keeping a proper look-out, or he might have seen the gate across the line in time to have stopped short of it.

In conclusion the Inspecting Officer remarked that one of the gates at this crossing did not comply with the requirement that it should completely close either the line or highway, and recommended that it be altered accordingly, and a red target or disc placed on each gate so as to make them conspicuous to drivers of both trains and vehicles. Had the gates been provided with interlocked signals or even with targets or discs, the accident, notwithstanding the negligence of the gatekeeper, would probably not have happened.

B.—*Accidents from Boiler Explosions, Failures of Axles, Wheels, or Tyres, or from other Defects in Rolling Stock.*

Three accidents in this class, resulting in the death of 13 passengers and injury to 9 passengers and 5 servants, were investigated.

One was due to the fracture of the tyre of a wheel of a Pullman car; one to the worn condition of the flanges of the leading wheels of an engine, and one to the fracture of a T-link hung from the axle-box of an engine to which was attached an underhung spring.

London, Brighton, and South Coast:

March 20th.—As an up express train from Brighton for London Bridge was approaching South Croydon station, the off leading wheel of the trailing-bogie of the Pullman car Jupiter began to break up, causing the other wheels of the bogie to leave the rails. Two passengers complained of being shaken.

The Inspecting Officer found that this accident was due to the fracture of the tyre of the wheel which broke up. The cause of the fracture was the exceeding thinness of the tyre, combined with a flaw which was not visible from the outside. The Company had only one other car with wheels and tyres similar to the above, and these were being replaced.

North British:

July 10th.—As a workmen's train from Clydebank to Shettleston was entering the up loop line at Queen Street low level station the engine, tender, and five vehicles left the rails. No person was injured.

Although the Inspecting Officer was of opinion that the speed was greater than is desirable at this point, he did not attribute the accident to that cause, but rather to the condition of the flanges of the leading wheels of the engine, which were worn thin and square; and he recommended that the wheels should at once be put into proper running condition, that the speed of trains entering the loops at Queen Street station be limited to eight miles an hour, and that the main line leading up to the facing-points should be fitted with check-rails for a few yards.

The driver and fireman had been on duty at the time of the accident for 12 hours and 40 minutes, and although it appeared from the evidence that their hours of work on alternate days were short, the Inspecting Officer considered that this did not excuse excessive hours on any one day.

Taff Vale:

August 12th.—As a down passenger train from Merthyr to Cardiff was approaching Llantrissant Junction, about 1¼ miles south of Treforest station, the leading brake-van left the rails, and ran in this position past the junction, after which, the line being broken up, this vehicle, and the five vehicles next behind it, fell down the slope of the embankment and were entirely wrecked, and the six following vehicles left the rails; the engine, which broke loose, and the four rear vehicles remaining on the line. Eight passengers were killed on the spot, and four died subsequently from injuries received. A man who was assisting in the work of rescuing the injured passengers was killed, and seven passengers and five servants of the Company were injured, some of them very seriously.

The Inspecting Officer found that the accident was due to the fracture of a T-link hung from the axle-box of the engine, to which was attached an underhung spring which dropped sufficiently far to strike a chair, and then fell-off and was dragged along under the engine, grooving the permanent-way and sleepers till it got under the leading van, causing it to leave the rails. No blame for carelessness or lapse of duty could be attributed to any servant of the Company, but he considered that the engine-driver committed an error of judgment in not making use of the continuous brake to reduce the speed of the train after seeing that the brake-van was off the rails, although the driver considered that he took the action best calculated to avert disaster. He suggested that the Company should consider this question, and draw up some further instructions for the guidance of drivers in a similar emergency.

In conclusion he called attention, first, to the fact that the rule that the guard should, before starting and at every change of the make up of the train, acquaint his driver of the composition of the train, was not attended to upon this occasion; and, secondly, to the hours of work of the signalmen in Treforest and Llantrissant junction-cabins, who worked 11 hours on one shift and 13 hours on the other, a division of time to which objection had been taken.

C.—*Accidents from Trains, &c. entering Stations at too great Speed.*

Eight accidents in this class, which caused injury to 84 passengers and 3 servants, were inquired into.

Six of these were due to mistakes and miscalculation of speed by engine-drivers; one to non-observance by Company's servants of the rules for working the continuous brakes; and one to failure of the brake through not having sufficient steam to create a vacuum.

Glasgow and South-Western:

January 4th.—A special passenger train from Carlisle was entering St. Enoch station, when it overran the proper stopping place and came slightly into collision with the buffer-stops. Five passengers complained of injury, but no one was seriously hurt, the injuries being caused by the breaking of some badly fitted roof-lamps in the fourth carriage.

The Inspecting Officer attributed the collision to a miscalculation of speed by the driver, who apparently did

not make sufficient allowance for the greasy state of the rails, and depending on his continuous brake to make the final stop, delayed too long in applying it for that purpose. He recommended the Company to adopt the course, already taken by some other Companies, of forbidding the use of the continuous brake for stopping trains at terminal stations, except in cases of emergency.

GREAT EASTERN:

January 17th.—A passenger train from Beccles, when entering Lowestoft station, failed to stop at the usual place, and came into collision with an empty fish-truck which was standing close to the buffer-stops at the end of the down platform. Five passengers complained of slight injuries.

The Inspecting Officer was of opinion that this slight collision was due to errors of judgment on the part of the driver in not making sufficient allowance for the wet and greasy condition of the rails when he entered the station, and in releasing his continuous brake before he had got his train thoroughly under control. He recommended that trains should enter terminal stations at a speed suitable to the particular hand-brake available, and that drivers should be instructed to use their hand-brakes when entering such stations, and to reserve the continuous brakes to meet unforeseen emergencies.

October 17th.—A down passenger train from Liverpool Street came into collision with the buffer-stops at Enfield Town station. Seven passengers complained of injury.

The Inspecting Officer found that this collision was due to non-observance of the rules enjoining drivers to enter terminal stations at hand-brake speed, and to dependence on the continuous brake for stopping the train, and its appliance too near the buffer-stops to prevent a collision. The driver was principally to blame, but the fireman was also to blame for being otherwise engaged than attending to the hand-brake and sand valves when entering the station.

The Inspecting Officer recommended the Company to reconsider their rule for entering terminal stations *at hand-brake speed*, and to adopt one allowing the use of hand-brakes only, except in cases of emergency.

GREAT NORTHERN:

November 15th.—A light engine and tender running tender first returning from Holme to be attached to a passenger train from Ramsey to Holme, entered Ramsey station at too high a speed, and came into collision with the four carriages comprising its train, which were already loaded and standing at the platform. Ten passengers complained of injury, and the brakesman on the engine was also slightly injured.

The Inspecting Officer found that this collision was due to the failure of the driver to get his engine under proper control when approaching Ramsey station, and was of opinion that he was hurrying back to make up lost time, and that owing to a miscalculation of speed and the greasy state of the rails, he allowed his engine to run too far before making use of his powerful brake which acted on all the wheels of the engine and tender.

It appeared to be the practice to work this short branch with a tender-engine which is not turned, and runs tender first on the journey from Holme to Ramsey; and the Inspecting Officer considered that as the running of engines tender first on such branches involves a certain amount of risk, and exposes the drivers and fireman to great discomfort in bad weather, properly constructed tank engines should be used. It was more than possible that if the engine in this case had been running in front of the tender, or if it had been a tank-engine, the accident would not have occurred, for in either of these cases the sand applied to the rails would have affected all the wheels, instead of only two pairs of the engine wheels.

In conclusion he called attention to the fact that under the order in accordance with the Regulation of Railways Act, 1889, issued to the Great Eastern Company, by whom this branch is leased to the Great Northern Company, on the 20th November 1890, the points and signals at Ramsey station ought to have been interlocked before the 20th November 1892, and suggested that the owning Company should be called upon to cause the necessary work to be carried out at once.

Steps have been taken by the Board of Trade to obtain compliance with the Order.

LONDON AND NORTH-WESTERN:

September 1st.—A passenger train from Craven Arms failed to stop at the proper place in Victoria station, Swansea, and came into collision with the buffer-stops at the end of the platform. Eight passengers were injured.

The Inspecting Officer considered that this collision was to be attributed to the confusion and anxiety of the driver, caused by seeing a man knocked down in front of his engine just before entering the station, and that the driver could hardly be held severely to blame for the accident. The guard, however, contributed to the collision by not applying his hand-brake in accordance with the Company's rules when entering the station.

MANCHESTER, SHEFFIELD AND LINCOLNSHIRE:

April 7th.—A passenger train from Stalybridge on entering London Road station, Manchester, ran into the buffer-stops at the end of the platform. Seven passengers complained of minor injuries.

The Inspecting Officer considered that this collision must be attributed to an error of judgment on the part of the engine-driver who appears to have miscalculated the speed at which he entered the station, and to have failed, in consequence, to make adequate use of the powerful brake at his disposal.

The Inspecting Officer again drew attention to the desirability of the adoption of some method of ensuring that drivers shall enter terminal stations at such a speed as to have a large amount of brake-power in reserve for unseen contingencies.

METROPOLITAN:

January 20th.—An up passenger train from Aylesbury when entering Baker Street station, overran the proper stopping place, and came into collision with the platform at the end of the dock. 31 passengers and both the guards were slightly injured.

The Inspecting Officer found that this collision was due to the driver having delayed too long the final application of his brake in order to bring his train to a stand at the usual place. (Since the accident, the Company have issued a special notice enjoining a stricter adherence to the instructions as to the use of the vacuum-brake at terminal stations.) He called attention to the shunting that had been allowed to take place at this station after the passenger train had been allowed to leave St. John's Wood Road, and trusted that steps would be taken to prevent any fouling of the main line when a train is approaching.

September 8th.—A Midland passenger train from Hendon came into violent collision with the buffer-stops at the end of the bay-line allotted to the Midland Railway Company at Moorgate Street Station. 11 persons complained of slight injuries.

The Inspecting Officer found that this collision was due to the fact that the engine-driver allowed the pressure of steam on his engine to get so low that he was unable to maintain the proper amount of vacuum for the due application of the continuous brake. The Inspecting Officer pointed out that there was ample hand-brake power on the train, irrespective of the automatic vacuum-brake, to have averted the collision, but that the rules of the Midland Railway Company did not enforce the use of hand-brakes in all cases when entering terminal stations.

D.—*Collisions between Engines and Trains following one another on the same Line of Rails, not including those at Junctions, Stations, and Sidings.*

One collision in this class, resulting in injury to 6 passengers was investigated.

This collision was due to a breach of the rules by an engine-driver.

GREAT SOUTHERN AND WESTERN OF IRELAND:

October 28th.—An up special passenger train from Roscrea for Dublin, while proceeding on its journey at a spot about a mile from Roscrea station, was run into at the rear by an unattached tender-engine, the driver of which had, of his own accord and in contravention of rules, followed the train with the view of helping it up a rising gradient of 1 in 150, near the commencement of which the collision occurred. Six passengers were injured but none of them seriously.

The Inspecting Officer found that this collision was solely due to a breach of the rules.

E.—*Collisions at Junctions.*

Three accidents of this class, which caused injury to 7 passengers and 1 servant, were inquired into.

One of these accidents was due to a driver passing signals at danger; one to the negligence of a foreman-shunter; and one to a mistake committed by a signalman. In two of the cases the Inspecting Officer called attention to the hours of duty of some of the Companies' servants concerned.

GREAT WESTERN:

October 26th—A Midland train from Bristol to Birmingham, after passing the junction at Droitwich, came into collision with six goods waggons which formed part of a Great Western goods train from Stoke Works, and had, after the performance of some shunting operations, been left standing on the down branch line leading to Stoke and Birmingham. Five passengers complained of injuries.

The Inspecting Officer considered that the person primarily responsible for this collision was the foreman in charge of the shunting, who did not appear to have seen to the coupling up of the goods vehicles which were left on the main line by the Great Western goods train, although the guard ought to have observed that part of his train was missing.

In conclusion the Inspecting Officer called attention to the hours of work of a driver and a fireman in the Midland Company's service called in evidence, and who were on duty for 14¾ hours on the day of the accident and for 15¼ hours on the previous day, and to those of the driver and fireman of the Great Western goods train who were on duty more than 12 hours on the day before the accident.

NORTH BRITISH:

October 3rd—An express passenger train from Edinburgh to Aberdeen ran past the Inverkeithing south junction home-signal at danger, and came into collision with a goods train which was being shunted on to another line out of the way of the express. One passenger was injured.

The Inspecting Officer found that this collision was caused by the failure of the driver of the express train to stop at the home-signal which as well as the distant-signal the driver admitted to have been at danger; and was of opinion that never having been stopped at it on previous occasions, the driver was approaching the junction under the expectation that he would find the home-signal lowered when he came in sight of it.

The signalman was also to blame for having disobeyed the rule, which lays down that the "line clear" signal should not be given until a train is a quarter of a mile past the home-signal.

SHEFFIELD AND MIDLAND, JOINT:

March 3rd—A Manchester, Sheffield, and Lincolnshire Company's train from Hayfield to Manchester, when approaching New Mills Junction, came into collision with a Midland Company's coal train which was being backed along the up main line across the junction. One passenger and the fireman of the passenger engine were injured.

The Inspecting Officer found that the collision was due principally to an unaccountable mistake of the relief signalman on duty in New Mills Junction cabin, who accepted the passenger train before making sure that the goods train was clear of the junction. The collision, however, would not have occurred if the driver of the passenger train had paid proper attention to the rules, and reduced the speed of his train when approaching the distant-signal at danger. If he had done so, he would have been able to have stopped his train, with the powerful continuous brake at his command, short of the home-signal.

The Inspecting Officer recommended that under no circumstances shall trains be allowed to approach this junction under the "Section clear but station or junction blocked" signal, and observed, although the fact had nothing to do with the cause of the collision, that the driver and fireman of the Midland train, had on the day before the occurrence, been on duty for about 13 hours.

F.—*Collisions within fixed Signals at Stations or Sidings.*

Inquiries were held into 17 collisions in this class, which caused injury to 160 passengers and 9 servants.

The causes which led to these collisions may be summarised as follows:—*

Mistakes or negligence of Companies' servants in 15 cases; insufficient or inadequately enforced regulations in 3 cases; defects of signals or locking apparatus in 6 cases; defective methods of working in 1 case; some empty carriages having accidentally run out of a siding on to the line in 1 case; and an engine driver having accidentally slipped down on his foot-plate in 1 case.

In three cases attention was called to the long hours worked by the Company's servants; and in two cases to unauthorised arrangements which had been made by the men as to their hours of duty.

CHESHIRE LINES:

August 7th.—While an excursion train from Liverpool Central station was standing in St. James' station, Liverpool, it was run into in the rear by a light-engine which had followed the train from the Central station. Nine passengers and the rear guard of the train were injured.

The Inspecting Officer considered that this collision must be attributed to a mistake of the driver of the light-engine, who assumed that a wave of the hand on the part of a foreman-shunter was intended for a "right-away" signal, but which the foreman-shunter stated that he intended only as a signal for the engine to draw forward for shunting purposes.

The Inspecting Officer called attention to the hours of duty of this driver and his fireman, who, at the time of the accident, had been on duty 15 hours 43 minutes, and while holding the driver responsible for the collision, was not disposed to regard his carelessness on this occasion with severity.

In conclusion, he recommended the placing of more powerful signal-lamps in the tunnel between the Central station and St. James'.

DERRY CENTRAL:

March 30th.—While the engine and some waggons forming part of a mixed train from Coleraine for Magherafelt were moving into a siding at Garvagh station, some of the waggons were struck by the engine of a passenger train from Magherafelt for Coleraine, the collision taking place inside the home-signal at which the passenger train had failed to stop, though both this signal and the distant-signal were admittedly at danger against his train. No persons were injured.

* *See* note to Summary on page 15.

The Inspecting Officer found that this collision was immediately due to neglect of duty on the part of the driver, fireman, and guard of the passenger train, in not attending in a proper manner to the signals. He called attention to the hours of duty of the driver and fireman of the mixed train, who worked on four days of the week for 13½ hours and were unemployed on the other three days; and to those of the driver of the passenger train, who, by a similar arrangement, worked for 14½ hours for four days in the week. He considered the station-master to blame for allowing the shunting to proceed after the passenger train came in sight.

In conclusion the Inspecting Officer suggested the amendment of the block-telegraph rules in force on the Derry Central Railway so that information may be given to the station in rear when a train has left the station from which the message is forwarded, and so that shunting so as to foul the line when a train is signalled may be forbidden; and that it should be clearly laid down in the train-staff working rules that shunting on the single line outside the starting-signal at a staff station when the staff is not at the station, is a breach of those rules. He also called attention to the fact that the tender of the passenger train was not supplied with a continuous-brake, it being very probable that had the tender been so fitted the train might have been stopped before the collision.

GLASGOW AND SOUTH-WESTERN:

August 15th.—As a down train from Ardrossan to Glasgow was running into St. Enoch station the engine came into collision with a light-engine which was standing foul of the crossing through which the Ardrossan train had to run to get to the platform line at which it was to stop. The driver of the light-engine was slightly injured.

The Inspecting Officer found that this collision was due to want of care on the part of the signalmen in the station cabin, who forgot that the light-engine was standing foul of the crossing when they lowered the signals for the passenger train.

Since the accident the Company have given orders that engines waiting to be attached to empty trains at St. Enoch are to be placed clear of the main line until they are required.

GREAT NORTHERN:

August 20th.—An excursion train from King's Cross came into collision with four empty coaches which had run down from the new platform siding at Luton and fouled the line east of the station. Ten passengers complained of shock and minor injuries.

The Inspecting Officer was of opinion that the empty coaches and some waggons which were in the siding had received a slight impetus from an engine and brake-van which had set back in the siding during shunting operations, and that the hand-brake in the guard's compartment of one of the empty carriages had not been screwed down. He was not, however, in a position to attribute negligence or carelessness to any of the servants of the Company.

The Inspecting Officer recommended that the siding on which the coaches were standing should be provided with properly interlocked safety points at each end.

GREAT NORTHERN:

December 23.—A down passenger train from London for Hatfield, when leaving King's Cross station, came into collision with some empty carriages which had been shunted into the tunnel outside the station. Nine passengers complained of being shaken, and a guard who was in the van attached to the empty carriages was injured.

The Inspecting Officer found that the primary cause of the collision was the derailment of two coaches of the front portion of a passenger train for the north during the shunting operations which were necessary in connection with the mail van, the carriages in front of which were sent forward into the tunnel to facilitate the operations for replacing the two coaches on the rails. But in carrying out this movement, it was a serious blunder, on the part of all concerned, not to have communicated with the signalman, and obtained his concurrence in the arrangements. The driver of the Hatfield train was wrong in entering the tunnel without having received permission from the signalman or the flagman, and in passing the starting-signal at the entrance to the tunnel at danger. Had he waited till the signal was lowered for him, or if necessary sounded his whistle to intimate to the signalman what he was waiting for, the latter would have been made aware of what was going on, and would have taken the necessary steps to guard against a collision. A further blunder was committed by the withdrawal, for the purpose of assisting in replacing the coaches, of a flagman who had been placed at the mouth of the tunnel with the object of protecting engines or vehicles shunted into it on the down main line. The Inspecting Officer recommended that if shunting into this tunnel is at times unavoidable, there should, in addition to the flagman, be properly interlocked shunting signals worked from the cabin.

He also called attention to the long hours of work of the driver of the Hatfield train on this day, stated to have been on account of the pressure of the Christmas traffic.

GREAT NORTH OF SCOTLAND:

August 2nd.—Three loaded passenger carriages and a brake-van forming part of a mixed train for Banff were allowed to run down from the platform at Tillynaught Junction station towards the loop points beyond which the engine and eleven loaded waggons were standing, in order that the two portions of the train might be connected, but the engine and waggons having been started back to make the connection in the usual manner at the platform the two portions came into collision. Five passengers were slightly injured.

The Inspecting Officer found that this collision was due to an irregular mode of making up the mixed train, and that the only person responsible was the station-master by whose orders the operation was carried out. The Company have given orders that this mode of making up mixed trains is on no account to be adopted in future.

He remarked that it is not advisable to run tender-engines with the tender in front, as appeared to have been done on this branch, especially when there is no provision for applying sand in front of the wheels which are fitted with brake-blocks.

HIGHLAND:

September 23rd.—A down goods train from Perth for Inverness due to cross an up mixed train for Perth at Dalmaspidal at 3.25 a.m. was at 4.43 a.m. run into by the latter train, the drivers of which had overrun the up home-signal. The driver of the leading engine of the mixed train was slightly injured.

The Inspecting Officer found that the primary cause of this collision was the failure of the up distant-signal to return to danger when the lever which works it had been put back into that position by the signalman, which failure was caused by the action of frozen snow. The drivers of the mixed train, however, did not keep as good a look out as they should have done for the home-signal.

He also recommended certain alterations in the signalling arrangements at this station and others similarly situated.

LANCASHIRE AND YORKSHIRE:

March 17.—While the waggons and van forming a coal train from Kersley, the engine of which had been detached for the purpose of running round it, were standing on the up local line inside the home-signal at Windsor Bridge sidings near Salford, they were run into by a passenger train from Wigan for Manchester. Fourteen passengers and the guard of the passenger train were injured.

The Inspecting Officer found that this collision was caused by the forgetfulness of and breach of rules by the signalman on duty in Windsor Bridge sidings cabin, who gave the "Line clear" signal to Pendleton under the impression that the next train to come would be a goods train and which he might allow, without breach of rule, to come as far as his home-signal; and when the Wigan passenger train was offered to him pulled off his home-signal forgetting that the coal train was standing on the line.

The Inspecting Officer recommended that sufficient time should be allowed for an engine to be turned at the end of its journey, and not have to be run, as in the case of the passenger train, tender first from Wigan, because there was not time to turn it at Manchester; and that alterations should be made at Windsor Bridge sidings to allow engines to run round their trains without using the main line for the purpose.

LANCASHIRE AND YORKSHIRE:

August 26th.—As a Lancashire and Yorkshire passenger train from Ormskirk to Liverpool was standing at the home-signal of B signal-cabin near the Exchange station, Liverpool, it was run into in rear by a light engine belonging to the Midland Railway Company. 50 passengers complained of injuries, none of which were very serious.

The Inspecting Officer found that this collision was caused by a mistake of the signalman in the Exchange junction-cabin, who does not appear to have put his signals to danger after the passenger train had passed, and thereby allowed the light engine to proceed into the section occupied by the passenger train. The driver and fireman of the light engine must be held to have contributed to the accident, as, had they been keeping a proper look-out, they might have stopped their engine before striking the train.

LONDON AND NORTH-WESTERN:

January 20th.—A passenger train from Bolton to Earlstown when passing Hulton's siding, near Chequerbent, came into collision with a goods brake-van attached to a tank-engine, which was standing on the down main line, waiting to be set back into the down sidings. 20 passengers complained of injury, but in only one case were the injuries of a serious nature, and the guard of the passenger train was slightly injured.

The Inspecting Officer considered that this collision was principally due to a mistake of the signalman in Hulton's siding-cabin, who thought that the engine and brake-van were in the siding clear of the main line, when he accepted the passenger train. He recommended some improvements in the signalling arrangements at this place, and that the signalman should not be interrupted in his signalling duties for the purpose of signing the tickets of special engine-drivers, and the sheets of goods guards going off duty.

LONDON AND SOUTH-WESTERN:

January 31st.—A Metropolitan Railway Company's passenger train from Aldgate when entering Richmond station came into collision with a train of empty London and South-Western Railway carriages. One passenger was injured.

The Inspecting Officer found that this slight collision was principally due to a blunder of the signalman, but it would not have occurred had not the tail-lamps been removed from the empty train by a porter sooner than they should have been. The signalman omitted to place a tablet on the signal-lever after the London and South-Western train had run into the platform line, and afterwards, in a moment of forgetfulness, admitted the Metropolitan train.

The Inspecting Officer considered that the whole of the signalling arrangements at this station required revision, and trusted that the Company would lose no time in putting the station in a satisfactory condition.

MIDLAND AND SOUTH-WESTERN JUNCTION:

September 23rd.—While an excursion train from Andover to Cheltenham was standing at the up platform at Ludgershall station, waiting for an ordinary train from Cheltenham to Andover to pass, it was run into by the latter train, which ran past the home-signal at danger. One passenger complained of slight injuries.

The Inspecting Officer found that this collision was caused by the failure of the driver of the ordinary train to stop at the home-signal, in consequence of his neglecting to get his train under proper control when passing the distant-signal at danger so as to enable him to stop at the home-signal. The porter-signalman at Ludgershall was to blame for neglecting to obey the regulations which rendered it obligatory on him, under the circumstances, to give the "Section clear but station blocked" signal instead of the "Line clear" signal for the ordinary train; as, had he done so, the driver might have taken more pains to bring his train to a stand at the home-signal. The guard and the driver were to blame for neglecting the rule as to guards informing the drivers, and the drivers ascertaining from the guard, the particulars of vehicles attached to and detached from the train during the journey.

The Inspecting Officer was further of opinion that looking at all the facts of the case, this collision must be held to betray a laxity of discipline and a disregard of rules, to which the earnest attention of the Company should be called.

In conclusion he recommended certain improvements in the interlocking of the signals with the points at the ends of the loops at the stations on this line.

NORTH BRITISH:

January 5th.—As a passenger train from Maryhill was approaching Possilpark it ran past the down home-signal, which was at danger, and came into collision with a train of empty goods waggons which were being pushed back into a siding. Three passengers were injured.

The Inspecting Officer found that this collision was due to the want of care on the part of the driver of the passenger train, who, although he had been properly cautioned that he might have to stop his train at Possilpark down home-signal, failed to do so, and was still running at a speed of about eight miles an hour when he came into collision with the goods train.

The Inspecting Officer called attention to an irregular arrangement of hours which had been made without authority by the signalman on duty in the Cowlairs North Junction signal-box, by which 13 hours were worked on the night shift and 11 hours on the day shift, and recommended that this should be stopped, as from the point of view of safety, long hours of work were equally objectionable when performed for the convenience of signalmen as when imposed by the Company.

In conclusion he observed that to send a train forward on a falling gradient of 1 in 80 under the "Caution" or "Section clear but station or junction blocked" signal as was done in this case, is an improper and dangerous proceeding, and that this signal should be used at as few places and as seldom as possible, and never upon such a section as that from Cowlairs North Junction to Possilpark.

NORTH BRITISH:

July 7th.—An up passenger train from Craigendoran to Bridgeton Cross, when approaching the latter station, came into collision with a down passenger train from Bridgeton Cross to Torrance which was crossing from the up to the down line through a cross-over road near the mouth of the tunnel between Bridgeton Cross and Gallowgate Central stations. Five passengers in the Craigendoran train, the driver and fireman of this train, and the driver of the Torrance train were injured.

The Inspecting Officer found that the only person to blame for this mishap was the driver of the Craigendoran train who passed the advanced starting-signal at danger.

Since the accident arrangements have been made for the down trains starting from the up side of the station to cross to the down line nearer to the signal-cabin and at a greater distance from the mouth of the tunnel.

In conclusion, the Inspecting Officer called attention to the fact that the drivers and firemen concerned were in the habit of working a long and a short day alternately, which is not a satisfactory mode of working.

NORTH-EASTERN:

May 27th.—As a passenger train from Tebay for Saltburn was drawing ahead at the north end of the up platform line at Darlington station it was run into at the rear by a return excursion train from Middleton-in-Teesdale for Hartlepool. 29 passengers complained of being injured or shaken.

The Inspecting Officer found that this collision was caused by a mistake of the signalman in Darlington north cabin, who, forgetting that the train from Tebay was standing at the up platform, and that the signalman in the east cabin had refused to accept the excursion train when offered, nevertheless lowered his signals for the excursion train, and only became aware of his mistake when it passed his box.

The Inspecting Officer called attention to the daily violation of the block telegraph regulations which occurs at this station in the cases of trains which have to make connection; two, and in some cases three trains being admitted into the same block section. He considered that it was a mistake to send with the excursion train a driver and a fireman each ignorant of the signals, &c. at Darlington; and recommended, that to prevent the occurrence of a mistake such as led to the collision that the signalman in the east cabin should have electric control over the southernmost up home-signal worked from the north cabin.

NORTH EASTERN:

November 24th.—An engine came into violent collision with a passenger train to which it was setting back for the purpose of being attached to it at West Hartlepool. Eight passengers were seated in the train and of these four complained of slight injuries.

The Inspecting Officer found that this accident was caused by the driver slipping on the foot-plates and then to save himself from falling, unintentionally catching hold of the regulator handle, thereby opening the regulator and giving the engine steam; and he was of opinion that the collision was purely accidental, and no blame could be attributed to any of the Company's servants.

SOUTH EASTERN:

November 7th.—After an up mail train had started from the mail platform at Dover Town station, its engine came into slight collision with the first of three empty carriages which had been left foul of the crossing through which the mail train was passing; this carriage was dragged forward with the engine, thrown off the rails, and came into collision with the first two of the cast iron columns supporting the roof of the station, causing a portion of the roof to come down, a portion of the *debris* falling upon the train. No personal injuries were sustained, the shelter of the engine having prevented any fragments of the falling roof from striking either the driver or fireman.

The Inspecting Officer found that the collision was due to neglect of duty on the part of an assistant shunter who instead of accompanying the empty carriages back into the siding into which they were shunted, and leaving them secured clear of the crossing through which the mail train had to pass, contended himself with seeing them run back clear of the crossing. The empty carriages had then rebounded and come slowly back at an almost imperceptible rate until the first one was foul of the crossing.

Although the immediate cause of the collision was as stated above, it would probably not have occurred had the working of an interlocked chock-block on the carriage siding provided upon the requirement of an Inspecting Officer of the Board of Trade after an inspection of some alterations at the station in 1880, not been improperly dispensed with.

G.—*Collisions between Engines or Trains meeting in opposite directions.*

No collision under this head formed the subject of inquiry.

H.—*Accidents or Collisions at Level Crossings of two Railways.*

No accident or collision under this head formed the subject of inquiry.

I.—*Accidents in consequence of Engines or Trains being wrongly turned into Sidings or otherwise through Facing-Points.*

One accident in this class, resulting in the death of a Company's servant and injury to 3 passengers was inquired into. This collision was primarily due to a breach of rules by a porter.

GREAT NORTH OF SCOTLAND:

December 29th.—As a down mixed train from Keith to Elgin was entering Drummuir station it ran into the goods siding, and came into collision with three waggons, and drove them against the buffer-stops, over which two of the waggons were forced. The collision was not a violent one, and three passengers only complained of slight injuries, but an engine-driver in the Company's service, who was riding upon the engine, unfortunately jumped from the engine before the collision took place, and, falling under the train, was run over and killed.

The Inspecting Officer found that this collision was due to a breach of rules by a porter, who forgot to see that the facing-points leading to the goods siding were in the proper position before lowering the signals for the mixed train. It was quite certain that if the Westinghouse brake on the passenger carriages had not been cut off during the journey by the introduction of these goods waggons between them and the engine, the driver would have had no difficulty in stopping short of the point of the collision, and that if the points and signals at this station had been interlocked the accident would not have occurred. The Inspecting Officer also called attention to the fact that the time allowed by the Board of Trade Order, issued under the Regulation of Railways Act, 1889, for the completion of the interlocking upon this line, and for compliance with the conditions in regard to the use of a continuous automatic-brake upon all passenger trains had expired. It was therefore apparent that although the accident was immediately due to a breach of the rules on the part of a servant of the Company, it was the result of a non-compliance with the Board of Trade Order.

J.—*Accidents on Inclines.*

One accident in this class, resulting in the death of three servants of the Company, and injury to 13 passengers, was inquired into.

TRALEE AND DINGLE:

May 22nd.—While a special mixed train from Dingle to Tralee was running over Curraduff Viaduct the engine left the rails on the curve west of the viaduct, and, with the exception of two vehicles, the whole of the train was precipitated into the bed of the river beneath. The driver, fireman, and a permanent-way inspector, who was riding on the engine, were killed, and 13 passengers were injured.

The Inspecting Officer found that the immediate cause of this accident was the excessive speed at which the train was travelling at the time, it having got beyond the control of the driver when descending the incline leading to the viaduct. He considered that the running away of the train was due, 1st, to the too rapid start made from the top of the incline; 2nd, to the train being in charge of a driver with insufficient experience in regard to the maintenance of steam, and the manipulation of the continuous brakes; 3rd, to the very greasy state of the rails; and 4th (probably), to the brake connections being in a leaky condition.

The Inspecting Officer recommended that, if possible, a deviation of the line which would improve the gradients and the curves should be made; and that the Company should have their engines carefully examined by an experienced locomotive engineer with the view of ascertaining whether they can be improved in such a way as to render them more capable than they appear to be, of taking a heavy train up the steep inclines, and, if nothing can be done, to limit the load to such a weight as the engines are able to cope with, employing assistant engines when the load exceeds that weight. He also made recommendations in regard to the vacuum-brake, which did not appear to be in first-rate order upon some of the Company's stock, and that more definite instructions as to the method of working this brake should be issued.

K.—*Trains on Fire.*

No accident under this head was inquired into.

L.—*Miscellaneous.*

Two accidents in this class, resulting in injury to 3 passengers and two servants, were inquired into.

Of these, one was due to the falling of a platform roof during a gale, and one to a mistake of a signalman.

London and South-Western, and London, Brighton, and South Coast Joint:

December 12th.—About five minutes after the arrival of a Brighton Company's passenger train from Brighton to Portsmouth Harbour, the roof covering the arrival island platform was blown down by a high gust of wind. Two out of the only three passengers in the train had left the platform before the roof fell, but the third, as he was passing along the platform, was struck by a portion of the roof and sustained a scalp wound. The driver and guard of the train, who were on the platform, were injured on the head, the guard seriously.

The Inspecting Officer considered that the fall of the roof over the island platform must, in the absence of any other probable cause, be attributed to the effect of a sudden gust of wind during the prevalence of a gale from the south and south-south-west.

In renewing the roof the joint Companies intend to use wrought-iron or steel supports instead of cast-iron columns, and to close in the space (which has been hitherto open) between the valance and the parapet at the south side of the island platform. With these improvements there ought to be no reason to apprehend the recurrence of any such accident.

In conclusion the Inspecting Officer recommended that in structures of this kind, where exposed to the force of the wind, it is desirable that the end columns and some intermediate ones should either be made stronger than the others, or clustered.

Sheffield and Midland Joint:

May 28th.—As an up Midland excursion train was being shunted from the up to the down line through a cross-over road at New Mills station to clear the line for the up express, a Midland bogie third-class carriage left the rails at the cross-over points on the up line, and was slightly damaged. No passengers were injnred in the carriage which left the rails, but two passengers in another part of the train complained of being shaken.

The Inspecting Officer found that this accident was due to the action of the signalman, who pulled over the cross-over points while the third-class carriage was standing over them. He recommended the alteration of the position of one of the cross-over roads at New Mills so as to give sufficient distance for a long train to stand between them.

The following is a SUMMARY of the circumstances which contributed to the accidents in the year 1893 in comparison with the ten preceding years.

Circumstances which contributed to the Accidents or Collisions.*	Nos. of Cases.										
	1883.	1884.	1885.	1886.	1887.	1888.	1889	1890.	1891.	1892.	1893.
Fracture or unloosening of couplings	2	1	—	2	—	—	1	—	—	—	—
Defective maintenance of rolling-stock	2	4	1	5	1	5	6	6	5	—	4
Defective maintenance of road or works	8	10	2	—	5	6	8	6	5	5	4
Defective construction of rolling-stock	6	2	—	2	1	1	2	1	3	1	—
Defective construction of road or works	5	13	7	1	4	5	6	2	2	2	2
Insufficient or defective accommodation for the requirements of the traffic	10	4	1	—	1	2	2	—	3	—	—
Insufficient establishment, long hours, or inexperienced servants	—	—	1	—	3	4	7	5	5	9	2
Inadequate or unsuitable brake power	27	27	13	16	14	4	7	3	12	3	2
Defective arrangement of signals or points, or want of or defective locking-apparatus, or want of safety-points or locking-bars or bolts	10	5	8	3	11	9	8	6	7	4	7
Insufficient or inadequately enforced regulations	7	—	1	—	1	2	—	9	14	14	5
Defective system for securing intervals between trains, or want of telegraph-communication or of block-system	13	10	3	7	4	8	7	9	8	6	3
Negligence, want of care, or mistakes of officers or servants	81	70	41	50	45	45	51	42	61	38	37
Excessive speed, having regard to engine, road, or other circumstances	30	25	7	4	7	5	8	8	16	9	5
Foggy or stormy weather, or snowstorms	11	1	2	6	7	6	1	11	12	2	—
Other causes	—	—	—	—	—	—	—	—	—	—	4
Totals	212	172	88	96	104	102	113	111	153	93	75

* The above summary of the circumstances which were the cause of or contributed to the accidents and collisions inquired into for the years 1882 to 1892 shows an excess over the number of the accidents and collisions, inasmuch as a large number of them arose from more than one circumstance.

Of the 46 investigated train accidents, the largest number occurred on the following railways; viz.:—

	Length of Railway. Miles at Dec. 1893.	Train Mileage.
4 on the North British	1,102	15,478,384
4 on the North-Eastern	1,615	27,848,846
3 on the Great Northern	837	18,483,287
3 on the London and North-Western	1,891	41,131,988
2 on the Glasgow and South-Western	385	5,880,305
2 on the Great Eastern	1,104	17,533,613
2 on the Great North of Scotland	316	1,895,817
2 on the Great Western	2,482	36,739,650
2 on the Highland	445	2,115,972
2 on the Lancashire and Yorkshire	523	15,904,391
2 on the Metropolitan	67	2,142,309
2 on the Midland	1,386	38,035,755
2 on the Sheffield and Midland Joint	29	770,978
2 on the South-Eastern	406	7,783,340

Of the remaining 12 accidents not more than one occurred on any one railway.

In connection with this table it should, however, be noticed that accidents taking place upon any railway may occur to trains belonging to other Companies, and may not be caused by any fault of the Company owning the line.

Accidents generally to Servants of Railway Companies.*

11 railway servants were killed and 286 injured whilst employed in the coupling and uncoupling of vehicles; 114 were killed and 1,141 injured whilst employed in various other shunting operations; 15 were killed and 57 injured by being caught between vehicles; 12 were killed and 42 injured by falling between trains and platforms; 73 were killed and 77 injured whilst working on the permanent-way and sidings; and 164 were killed and 183 injured whilst walking, crossing, or standing on the line on duty. The total number of railway servants killed and injured in the course of railway traffic, exclusive of accidents to trains, were 450 killed and 2,558 injured.

The following is a comparative statement relating to the number of railway servants killed and injured whilst employed in shunting operations, including the coupling and uncoupling of vehicles, for the years 1884 to 1893 inclusive, during which period of ten years 1,965 miles of additional railway have been opened, and the number of railway servants employed has largely increased.

Year.	In Coupling and Uncoupling operations only.		In all shunting operations *including* Coupling and Uncoupling Vehicles.	
	Killed.	Injured.	Killed.	Injured.
1884	29	341	91	1,320
1885	36	267	138	1,236
1886	23	301	119	1,168
1887	26	232	115	1,152
1888	15	258	99	1,261
1889	19	295	127	1,521
1890	16	324	129	1,648
1891	24	267	160	1,671
1892	19	305	158	1,641
1893	11	286	125	1,427

In the table following will be found the number of servants of railway companies killed and injured by train accidents whilst engaged in their several occupations in the respective years 1874 to 1893, and the proportion of the whole number killed and of the whole number injured to the total number employed, calculated upon the

* The Returns made by the Railway Companies show that 80 persons were killed and 4,687 injured whilst on the premises of the Companies by accidents in which the movement of railway vehicles was not concerned. Of these 56 killed and 4,204 injured were servants of Companies or contractors. As, however, these casualties cannot properly be considered to have occurred in the course of working the railways, the figures have not been here taken into consideration.

numbers employed given in the returns presented to Parliament for the years 1874, 1884, and 1889.*

Year.	By Train Accidents.		By Accidents on Railways, exclusive of Train Accidents.		Proportion of Accidents occurring to Servants of Companies by Train and other Accidents to the whole number employed, on the assumption mentioned below.*		Total Numbers employed. The Figures in Italics are Estimated.*
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
1874 -	46	271	742	2,544	1 in 320	1 in 89	250,000
1875 -	21	239	744	3,379	*1 in 334*	*1 in 70*	*255,000*
1876 -	28	236	645	2,364	*1 in 386*	*1 in 100*	*260,000*
1877 -	22	154	620	2,009	*1 in 414*	*1 in 123*	*265,000*
1878 -	15	156	529	1,847	*1 in 500*	*1 in 135*	*270,000*
1879 -	8	118	444	1,836	*1 in 619*	*1 in 143*	*280,000*
1880 -	23	118	523	1,962	*1 in 531*	*1 in 139*	*290,000*
1881 -	19	168	502	2,278	*1 in 576*	*1 in 123*	*300,000*
1882 -	21	153	532	2,423	*1 in 570*	*1 in 122*	*315,000*
1883 -	11	87	543	2,373	*1 in 596*	*1 in 134*	*330,000*
1884 -	23	115	523	2,204	1 in 634	1 in 149	346,426
1885 -	13	81	438	2,036	*1 in 768*	*1 in 163*	*346,426*
1886 -	4	81	421	1,929	*1 in 815*	*1 in 172*	*346,426*
1887 -	8	109	414	1,966	*1 in 821*	*1 in 167*	*346,426*
1888 -	7	93	389	2,100	*1 in 874*	*1 in 157*	*346,426*
1889 -	4	117	431	2,652	1 in 877	1 in 138	381,626
1890 -	12	147	487	2,975	*1 in 765*	*1 in 122*	*381,626*
1891 -	12	154	537	3,007	*1 in 695*	*1 in 121*	*381,626*
1892 -	9	92	525	2,823	*1 in 714*	*1 in 130*	*381,626*
1893 -	10	73	450	2,558	*1 in 829*	*1 in 145*	*381,626*

Note.—These figures include accidents to contractors' servants, of whom 14 were killed and 15 injured during the year 1893.

* The numbers employed are known accurately only for the years 1874, 1884, and 1889. The figures printed in *italics* are estimated for the years 1875 to 1883 and 1885 to 1888. Those for the years since 1889 are calculated upon the numbers given in that year. The number of contractors' servants cannot be estimated.

The following table shows the number of men employed by the companies in various occupations and the number of fatal accidents and injuries to each class.

Class of Servants.	Number employed.†	Number killed and injured during the Year 1893.		Proportion to the Number employed.	
		Killed.	Injured.	Killed.	Injured.
Station-masters - - - -	6,953	2	14	1 in 3,476	1 in 496
Brakesmen and goods-guards - -	10,038	39	473	1 in 257	1 in 21
Permanent-way men - - -	54,273	136	110	1 in 399	1 in 493
Gatekeepers - - - -	3,070	2	5	1 in 1,535	1 in 614
Engine-drivers - - - -	15,180	25	285	1 in 607	1 in 53
Porters - - - - -	38,808	56	356	1 in 693	1 in 109
Shunters - - - -	5,922	33	336	1 in 179	1 in 17
Firemen - - - - -	14,804	13	386	1 in 1,138	1 in 38
Inspectors - - - -	5,226	4	24	1 in 1,306	1 in 217
Guards (passenger) - - -	5,033	5	60	1 in 1,006	1 in 83
Pointsmen and signalmen - -	21,153	11	31	1 in 1,923	1 in 682
Labourers - - - -	28,904	36	79	1 in 802	1 in 365
Ticket collectors - - - -	2,410	—	10	—	1 in 241
Mechanics - - - -	64,802	14	36	1 in 4,628	1 in 1,800
Other classes - - - -	109,050	84	426	1 in 1,298	1 in 255
Total - - - - -	381,626	460	2,631	1 in 829	1 in 145

† These figures are taken from a Return which shows the number of men employed on the 31st December 1889.

Accidents to Persons other than Passengers or Servants of Railway Companies.

The accidents to persons passing over railways at level-crossings show a decrease on the figures for the previous year, the numbers being 55 killed and 30 injured, against 77 killed and 21 injured in 1892. The number of trespassers was 274 killed and 135 injured, against 258 killed and 121 injured in 1892, or an increase of 16 killed and 14 injured. The number of suicides was 86, against 89 in 1892.

Absolute Block and Interlocking Systems.

The amount of progress that has been made in the adoption of these systems is stated in the Returns annually presented to Parliament.

The proportion in which the signal and point levers had been interlocked on railways was 99 per cent. in England, 97 per cent. in Scotland, 93 per cent. in Ireland, and 98 per cent. for the United Kingdom.

The following table shows the length of double and single line in the United Kingdom open for passenger traffic on the 31st December 1893, and the length of such lines worked upon the various systems.

	Line open for Passenger Traffic.		Worked on Absolute Block System.				Worked on other Telegraph Systems.		Single Lines worked under		
				Single Line.							
	Double.	Single.	Double Line.	With Train Staff System.	Without Train Staff System.	Electrical Train Staff or Tablet System.	Double Line.	Single Line.	Single Engine System.	Train Porter System.	Train Staff System.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
England and Wales	9,204	4,385	9,188	2,510	42	1,455	16	29	205	1	141
Scotland - -	1,271	1,655	1,269	197	260	650	1	–	427	1	120
Ireland - -	613	2,371	591	508	1	1,348	21	–	153	–	362
United Kingdom -	11,088	8,411	11,048	3,215	303	3,453	38	29	785	2	623

Level Crossings.

In most of the cases of complaint of level crossings which were brought to the notice of this Department by the occurrence of accidents or the complaints of local authorities and individuals, the Board of Trade had no statutory power to compel provision to be made for the public safety. In many instances the railway companies concerned have, however, been communicated with, and satisfactory arrangements, usually necessitating the construction of a footbridge or subway, have in several instances been made.

A return of the fatal accidents which have occurred on level crossings during the last five years has been prepared by the Board of Trade, and presented to the House of Lords.

Continuous Brakes.

The continuous brakes return laid before Parliament for the half-year ended 31st December 1893, shows that the number of vehicles fitted with brakes complying with some or all of the conditions laid down in the requirements of this Department amounted at that date, to 93 per cent. of the number in use, and that the number of vehicles fitted with pipes and connections only amounted to 6 per cent.

General Remarks.

Railway accidents are dealt with in this Report mainly from two points of view, (1) the safety of the travelling public, and (2) the safety of the men employed in working the traffic.

The numbers of passengers killed and injured both from accidents to trains and other causes, show a satisfactory decrease. In the fatal cases a total decrease of 17 per cent. is shown, and in the cases of injury a decrease of 9 per cent. The difference is most marked in the cases of train accidents, where the decrease amounts to 19 per cent. in both killed and injured.

It would appear that when all causes and classes of accidents are taken into account, only one passenger is killed in 8,237,519 passenger journeys, and that only one in 715,132 is injured.

Accidents to trains have again decreased; the number of cases in which official inquiries were ordered by the Board of Trade being slightly less than last year, which was far below the average of previous years. The most serious cases were those at the Carraduff Viaduct on the Tralee and Dingle railway; at Poulton-le-Fylde on the Lancashire and Yorkshire and London and North-Western Joint railway; at Llantrissant Junction on the Taff Vale railway; and in the Box Tunnel on the Great Western railway, the last however being happily unattended with fatal consequences. The number of persons killed and injured in these four accidents, which were all cases of trains leaving the rails, was 19 killed and 80 injured, forming a large proportion of the total of persons killed and injured by train accidents.

The Board of Trade have continued to urge the Railway Companies to instruct their servants to refrain, except in cases of emergency, from using the continuous brakes to stop trains when entering terminal stations. Drivers should reduce the speed of their trains by the use of the hand-brakes, with the assistance of those in the guards' vans, and only rely on the continuous brake as a reserve of brake power to fall back on when necessary. On some of the more important lines these views have been adopted.

In consequence of the action taken by the Board of Trade in 1892, meetings of the representatives of the Companies have been held to consider the arrangements under which trains on converging lines are allowed to approach junctions simultaneously under the "Section clear, but junction blocked" signal, and a committee of experts has been appointed to assimilate, as far as possible, the methods of block-signalling throughout the whole of the country. Owing, however, to the diversity of instruments employed, and partly to differences in the mode of working, a final conclusion has not yet been arrived at, but it is hoped that ere long satisfactory arrangements may be made.

Two of the train accidents which were the subject of inquiry occurred in connection with the use of travelling cranes. In one case, viz., that at Willaston on the London and North-Western Railway, the accident happened while the crane was being moved out of a siding, and was caused by the "jib" projecting over the main line when a passenger train was passing. In the other case the crane was actually in use for the purpose of loading timber, and a train was allowed to approach while the balance-box was foul of the line.

The attention of the Associated Companies was drawn to the necessity for properly securing these portable cranes during their transport from one place to another, and directions have now been issued by the Companies which will, it is hoped, prevent the recurrence of accidents of this description.

A novel accident occurred at Portsmouth Harbour Station where a platform roof was blown down during a gale of wind. The attention of the Associated Companies was called to the recommendations of the Inspecting Officer who held the inquiry, to the effect that structures of the kind, when exposed to the force of the wind, the supports should be strengthened, and the Association have communicated specially with the several companies in the matter.

Where the Inspecting Officers of the Board of Trade have made recommendations, their views have been pressed upon the Companies, and have in most cases been favourably received.

It is gratifying to observe that casualties to the Companies' servants show a further decrease, the total number killed and injured in the past year, both from train accidents and from accidents in connection with the movement of railway vehicles, being 460 killed and 2,631 injured, as against 534 killed and 2,915 injured in 1892, and 549 killed and 3,161 injured in 1891; a decrease in the two years of over 16 per cent. in both the fatal and non-fatal cases. The accidents resulting from shunting operations also show a decrease, viz., 125 killed and 1,427 injured in 1893, as against 158 killed and 1,641 injured in 1892; a decrease of nearly 21 per cent. in the killed and of 13 per cent. in the injured.

In spite of the decrease in these casualties, however, the figures must be looked upon as far from satisfactory, and this branch of the subject is receiving the earnest attention of the Board of Trade.

In those cases of train accidents in which the officer holding the inquiry had occasion to call attention to the excessive hours of duty of some of the servants concerned, the Board of Trade communicated with the company affected. Cases which occurred after the passing of the Regulation of Railways Act, 1893, were dealt with under that Act.

During 1893 the Board of Trade were in correspondence with the Associated Railway Companies in order to secure greater uniformity in the system of reporting accidents to servants. No satisfactory conclusion was come to however, and a Departmental Committee was subsequently appointed to consider questions relating to the Accident Returns. The Committee have given close attention to the subject, and their report will no doubt be issued at an early date.

I have, &c.,

FRANCIS J. S. HOPWOOD.

Railway Department,

Board of Trade,

4th September 1894.

APPENDIX No. 1.

ABSTRACT of the ACCIDENTS which have been reported upon by the Inspecting Officers of the Department during the year 1893.—Classified according to the Class of each Accident, and the Causes to which it may be attributed.

CLASS OF ACCIDENT AND NAME OF RAILWAY.	Number of Accidents.	SUFFERERS BY ACCIDENT.				CAUSES OF ACCIDENT.																		
		Passengers and others.		Servants of Company.		Attributable to the Rolling Stock or the Works.					Attributable to the Management.													
						Fracture or unloosening of Couplings.	Defective Maintenance of		Defective Construction of		Insufficient or defective Accommodation for the Requirements of the Traffic.	Insufficient Establishment, inexperienced Servants, or too long Hours of Duty.	Insufficient Brake Power.	Want of Communication between Guard and Engine-driver.	Defective Arrangements of Signals or Points, or Want of or defective Locking Apparatus, or Want of Safety Points, or Locking Bars or Bolts.	Want of Time-pieces.	Insufficient or inadequately enforced Regulations.	Defective System for securing Intervals between Trains, or Want of Telegraph Communication, or of Block Telegraph System.	Negligence, Want of Care or Mistake of Officers and Servants.	Excessive Speed, having regard to Engine, or Road, or other Circumstances.	Foggy Weather, or Snow.	Improper Interference by Persons not under the Control of the Company.	Other causes.
		Killed.	Injured.	Killed.	Injured.		Machinery of Train.	Road or Works.	Machinery of Train.	Road or Works.														
CLASS OF ACCIDENT.																								
A.—Accidents from Engines or Vehicles meeting with or leaving the Rails in consequence of Obstructions or of Defects in connection with the Permanent-way or Works	10	3	69	3	4	–	–	4	–	1	–	1	–	–	–	–	1	–	7	2	–	–	2
B.—Accidents from Boiler-explosions, or from Failures of Axles, Wheels, or Tyres, or from other defects in rolling-stock	3	13	9	–	5	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C.—Accidents from Trains entering Stations at too great Speed	8	–	84	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	8	1	–	–	–
D.—Collisions between Engines and Trains following one another on the same Line of Rails, excepting at Junctions, Stations, or Sidings	1	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
E.—Collisions at Junctions	3	–	7	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	3	1	–	–	–
F.—Collisions at Stations or Sidings	17	–	160	–	9	–	–	–	–	–	–	1	1	–	6	–	3	3	15	–	–	–	1
G.—Collisions between Engines or Trains meeting in opposite Directions	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H.—Collisions at Level-Crossings of two Railways	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
I.—Accidents in consequence of Engines or Trains being wrongly turned into Sidings or otherwise through Facing-Points	1	–	3	1	–	–	1	–	–	–	–	–	1	–	1	–	–	–	1	–	–	–	–
J.—Accidents on Inclines	1	–	1	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–
K.—Trains on Fire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L.—Miscellaneous	2	–	3	–	2	–	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	1
TOTAL	46	16	354	7	24	–	4	4	–	2	–	2	2	–	7	–	5	3	37	5	–	–	4
NAME OF RAILWAY.																								
Cheshire Lines	1	–	9		1	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–
Derry Central	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	1	–	–	–	–
Glasgow and South-Western	2	–	5	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–
Great Eastern	2	–	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–
Great Northern	3	–	29	–	2	–	–	–	–	–	–	–	–	–	1	–	–	–	2	1	–	–	–
Great North of Scotland	2	–	8	1	–	–	–	–	–	–	–	–	1	–	1	–	1	–	2	–	–	–	–
Great Southern and Western of Ireland	1	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Great Western	2	–	14	–	4	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Highland	2	–	–	–	1	–	–	1	–	–	–	–	–	–	1	–	–	–	2	1	–	–	–
Lancashire and Yorkshire	2	–	64	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–
London and North-Western	3	–	31	1	1	–	–	–	–	–	–	–	–	–	1	–	1	–	3	–	–	–	–
London and South-Western	1	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–
London and South-Western and London Brighton and South Coast Joint	1	–	1	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
London, Brighton, and South Coast	1	–	2	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Manchester, Sheffield, and Lincolnshire	1	–	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Manchester South Junction and Altrincham	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Metropolitan	2	–	42	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–
Midland	2	–	8	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Midland and South-Western Junction	1	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	1	–	–	–	–
North British	4	–	9	–	3	–	1	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	–
North-Eastern	4	–	39	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2	–	–	–	2
Preston and Wyre	1	2	42	1	–	–	–	1	–	1	–	–	–	–	–	–	1	1	1	1	–	–	–
[illegible] and Midland Joint	2	–	3	–	1	–	–	–	–	1	–	–	–	–	–	–	1	–	2	1	–	–	–
South-Eastern	2	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	2	–	–	–	–
Taff Vale	1	13	7	–	5	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Tralee and Dingle	1	–	13	3	–	–	1	–	–	–	–	1	–	–	–	–	–	–	1	1	–	–	–
TOTAL OF THE ABOVE RAILWAYS	46	16	354	7	24	–	4	4	–	2	–	2	2	–	7	–	5	3	37	5	–	–	4

APPENDIX No. 2.

LIST of the ACCIDENTS which have been reported upon by the Inspecting Officers of the Department during the year 1893.—Classified according to the Nature of each Accident, and the Causes to which it may be attributed.

NAME OF RAILWAY AND DESCRIPTION OF ACCIDENT.	SUFFERERS BY ACCIDENT.				CAUSES OF ACCIDENT.																		
					Attributable to the Rolling Stock or the Works.				Attributable to the Management.														
	Passengers and others.		Servants of Company only.		Fracture or unloosening of Couplings.	Defective Maintenance of		Defective Construction of	Insufficient or defective Accommodation for the Requirements of the Traffic.	Insufficient Establishment, inexperienced Servants, or too long Hours of Duty.	Insufficient Brake Power.	Want of Communication between Guard and Engine-driver.	Defective Arrangements of Signals or Points, or Want of or defective Locking Apparatus, or Want of Safety Points, or Locking Bars or Bolts.	Want of Time-pieces.	Insufficient or inadequately enforced Regulations.	Defective System for securing Intervals between Trains, or Want of Telegraph Communication, or of Block Telegraph System.	Negligence, Want of Care, or Mistake of Officers or Servants.	Excessive Speed, having regard to Engine, or Road, or other Circumstances.	Foggy Weather.	Improper Interference by Persons not under the Control of the Company.	Other Causes.			
	Killed.	Injured.	Killed.	Injured.		Machinery of Train.	Road or Works.	Machinery of Train.	Road or Works.														
A.—*Accidents from Engines or Vehicles meeting with Obstructions or leaving the Rails in consequence of Obstructions or of Defects in connection with the Permanent-Way or Works.*																							
GREAT WESTERN:																							
September 16th.—Passenger train left the rails in Box tunnel, and was run into by another passenger train	–	9	–	4	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
HIGHLAND:																							
July 18th.—Passenger train partly left rails at Dingwall station	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–
LONDON AND NORTH-WESTERN:																							
April 12th.—Passenger train came into collision with the jib of a travelling crane at Willaston	–	3	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
MANCHESTER SOUTH JUNCTION AND ALTRINCHAM:																							
December 1st.—Ballast engine and van ran through level-crossing gates at Altrincham		1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
MIDLAND:																							
August 1st.—Passenger train partly left rails in Wickwar tunnel	–	3	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
December 12th.—Part of passenger train was thrown off rails by a landslip at Ynisygeinon Junction	–	5	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
NORTH-EASTERN:																							
November 6th.—Passenger train came into collision with balance-box of a travelling crane at Everingham	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
November 27th.—Passenger train ran into a horse at Ulleskelf	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
PRESTON AND WYRE JOINT:																							
July 1st.—Passenger train left rails near Poulton-le-Fylde	2	42	1	–	–	–	1	–	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–
SOUTH-EASTERN:																							
May 5th.—Passenger train ran through gate of level-crossing at Erith	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–
TOTAL	3	69	3	4	–	–	5	–	1	–	1	–	–	–	–	1	–	7	2	–	–	2	

B.—*Accidents from Boiler-Explosions, Failures of Axles, Wheels, or Tyres, or from other Defects in the Rolling Stock.*

| NAME OF RAILWAY AND DESCRIPTION OF ACCIDENT. | SUFFERERS BY ACCIDENT. | | | | CAUSES OF ACCIDENT. | | | |

NAME OF RAILWAY AND DESCRIPTION OF ACCIDENT.	SUFFERERS BY ACCIDENT.				CAUSES OF ACCIDENT.																				
					Attributable to the Rolling Stock or the Works.				Attributable to the Management.																
	Passengers and others.		Servants of Company only.		Fracture or unloosening of Couplings.	Defective Maintenance of		Defective Construction of		Insufficient or defective Accommodation for the Requirements of the Traffic.	Insufficient Establishment, inexperienced Servants, or too long Hours of Duty.	Insufficient Brake Power.	Want of Communication between Guard and Engine-driver.	Defective Arrangements of Signals or Points, or Want of or defective Locking Apparatus, or Want of Safety Points, or Locking Bars or Bolts.	Want of Time-pieces.	Insufficient or inadequately enforced Regulations.	Defective System for securing Intervals between Trains, or Want of Telegraph Communication, or of Block Telegraph System.	Negligence, Want of Care, or Mistake of Officers or Servants.	Excessive Speed, having regard to Engine, or Road, or other Circumstances.	Foggy Weather.	Improper Interference by Persons not under the Control of the Company.	Other Causes.
	Killed.	Injured.	Killed.	Injured.		Machinery of Train.	Road or Works.	Machinery of Train.	Road or Works.																

D.—*Collisions between Engines and Trains following one another on the same Line of Rails, excepting at Junctions, Stations, or Sidings.*

GREAT SOUTHERN AND WESTERN OF IRELAND:																									
October 28th.—A passenger train was run into at the rear by a light-engine - -	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–			
TOTAL - - - - -	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–			

E.—*Collisions at Junctions.*

GREAT WESTERN:																									
October 26th.—Collision between a passenger train and goods waggons at Droitwich Junction - - -	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–			
NORTH BRITISH:																									
October 3rd.—Collision between a passenger train and a goods train at Inverkeithing South Junction - -	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–			
SHEFFIELD AND MIDLAND JOINT:																									
March 3rd.—Collision between a passenger train and a goods train at New Mills Junction - - - -	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	–	–	–			
TOTAL - - -	–	7	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	3	1	–	–				

F.—*Collisions within Fixed Signals at Stations or Sidings.*

CHESHIRE LINES:																									
August 7th.—A passenger train, whilst standing in St. James' station, Liverpool, was run into in rear by a light-engine -	–	9	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–			
DERRY CENTRAL:																									
March 30th.—A passenger train came into collision with a part of a mixed train which was being moved into a siding at Garragh station - - -	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	1	–	–	–	–			
GLASGOW AND SOUTH-WESTERN:																									
August 15th.—A passenger train came into collision with a light-engine at St. Enoch station - - - -	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–			
GREAT NORTHERN:																									
August 20th.—A passenger train came into collision with some empty coaches at Luton - - - -	–	10	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–			
December 23rd.—A passenger train came into collision with some empty coaches at King's Cross - - -	–	9	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–			
GREAT NORTH OF SCOTLAND:																									
August 2nd.—The passenger portion of a mixed train came into collision with the goods portion at Tillynaught Junction station - - - -	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–			
HIGHLAND:																									
September 23rd.—A mixed train came into collision with a goods train at Dalnasfidal - - - -	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–			

F.—*Collisions within Fixed Signals at Stations or Sidings*—continued.

NAME OF RAILWAY AND DESCRIPTION OF ACCIDENT.	SUFFERERS BY ACCIDENT. Passengers and others. Killed.	Passengers and others. Injured.	Servants of Company only. Killed.	Servants of Company only. Injured.	CAUSES OF ACCIDENT. Attributable to the Rolling Stock or the Works. Fracture or unloosening of Couplings.	Defective Maintenance of Machinery of Train.	Defective Maintenance of Road or Works.	Defective Construction of Machinery of Train.	Defective Construction of Road or Works.	Attributable to the Management. Insufficient or defective Accommodation for the Requirements of the Traffic.	Insufficient Establishment, inexperienced Servants, or too long Hours of Duty.	Insufficient Brake Power.	Want of Communication between Guard and Engine-driver.	Defective Arrangements of Signals or Points, or Want of or defective Locking Apparatus, or Want of Safety Points, or Locking Bars or Bolts.	Want of Time-pieces.	Insufficient or inadequately enforced Regulations.	Defective System for securing Intervals between Trains, or Want of Telegraph Communication, or of Block Telegraph System.	Negligence, Want of Care, or Mistake of Officers or Servants.	Excessive Speed, having regard to Engine, or Road, or other Circumstances.	Foggy Weather.	Improper Interference by Persons not under the Control of the Company.	Other Causes.
LANCASHIRE AND YORKSHIRE:																						
March 17th.—A passenger train came into collision with a coal train at Windsor Bridge sidings	–	14	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	
August 26th.—A light-engine came into collision with the rear of a passenger train near the Exchange station, Liverpool	–	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	
LONDON AND NORTH-WESTERN:																						
January 20th.—A passenger train came into collision with a goods engine and brake-van near Claquerbert	–	20	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	1	–	–	–	
LONDON AND SOUTH-WESTERN:																						
January 31st.—A passenger train came into collision with an empty carriage train at Richmond	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	
MIDLAND AND SOUTH-WESTERN JUNCTION:																						
September 23rd.—A passenger train ran into another passenger train at Ludgershall station	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	1	–	–	–	
NORTH BRITISH:																						
January 5th.—A passenger train came into collision with an empty waggon train at Possilpark	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	
July 7th.—A passenger train came into collision with another passenger train at Bridgeton Cross	–	5	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	
NORTH-EASTERN:																						
May 27th.—A passenger train came into collision with another passenger train at Darlington station	–	29	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	
November 24th.—An engine came into collision with a passenger train at West Hartlepool	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
SOUTH-EASTERN:																						
November 7th.—A passenger train came into collision with some empty carriages at Dover	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	
TOTAL	–	160	–	9	–	–	–	–	–	–	1	1	–	6	–	3	3	15	–	–	–	

G.—*Collisions between Engines or Trains meeting in opposite Directions.*

No collisions occurred under this head.

H.—*Collisions at Level-Crossings of two Railways.*

No collisions occurred under this head.

I.—*Accidents in consequence of Engines or Trains being wrongly turned into Sidings or otherwise through Facing-Points.*

GREAT NORTH OF SCOTLAND:																						
December 29th.—A mixed train, when entering Drummuir station, ran into a goods siding and came into collision with some empty waggons	–	3	1	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	–	–	
TOTAL	–	3	1	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	–	–	

NAME OF RAILWAY AND DESCRIPTION OF ACCIDENT.	SUFFERERS BY ACCIDENT.				CAUSES OF ACCIDENT.																											
					Attributable to the Rolling Stock or the Works.				Attributable to the Management.																									
	Passengers and others.		Servants of Company only.		Fracture or unloosening of Couplings.	Defective Maintenance of		Defective Construction of	Insufficient or defective Accommodation for the Requirements of the Traffic.	Insufficient Establishment, inexperienced Servants, or too long Hours of Duty.	Insufficient Brake Power.	Want of Communication between Guard and Engine-driver.	Defective Arrangements of Signals or Points, or Want of or defective Locking Apparatus, or Want of Safety Points, or Locking Bars or Bolts.	Want of Time-pieces.	Insufficient or inadequately enforced Regulations.	Defective System for securing Intervals between Trains, or Want of Telegraph Communication, or of Block Telegraph System.	Negligence, Want of Care, or Mistake of Officers or Servants.	Excessive Speed, having regard to Engine, or Road, or other Circumstances.	Foggy Weather.	Improper Interference by Persons not under the Control of the Company.	Other Causes.											
	Killed.	Injured.	Killed.	Injured.		Machinery of Train.	Road or Works.	Machinery of Train.	Road or Works.																									
J.—*Accidents on Inclines.*																																
TRALEE AND DINGLE:																																
May 22nd.—A special mixed train left the rails at Carraduff Viaduct - -	–	13	3	–	–	1	–	–	–	1	–	–	–	–	–	–	1	1	–	–	–											
TOTAL - - - - -	–	13	3	–	–	1	–	–	–	1	–	–	–	–	–	–	1	1	–	–	–											
K.—*Trains on Fire.*																																
No accidents occurred under this head.																																
L.—*Miscellaneous.*																																
LONDON AND SOUTH-WESTERN AND LONDON, BRIGHTON, AND SOUTH COAST:																																
December 12th.—The roof of a platform was blown down at Portsmouth Harbour station on to a passenger train - -	–	1	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1										
SHEFFIELD AND MIDLAND JOINT:																																
May 24th.—A carriage of a passenger train left the rails when being shunted at New Mills station - - -	–	2	–	–			–		1	–	–	–		–	–	–	1	–	–	–	–										
TOTAL - - - -	–	3	–	2		–	–	–	1	–	–	–		–	–	–	1	–	–	–	1										

RETURNS

OF

ACCIDENTS AND CASUALTIES

AS REPORTED TO THE BOARD OF TRADE BY THE SEVERAL RAILWAY COMPANIES IN THE UNITED KINGDOM,

During the Year ending 31st December 1893,

In pursuance of the Regulation of Railways Act (1871), 34 & 35 Vict. cap. 78;

TOGETHER WITH

REPORTS OF THE INSPECTING OFFICERS OF THE RAILWAY DEPARTMENT TO THE BOARD OF TRADE

UPON

CERTAIN ACCIDENTS

Which were inquired into.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

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TABLE OF CONTENTS.

Page

SUMMARY of ACCIDENTS and CASUALTIES reported to the BOARD of TRADE during the Year ending 31st December 1893 - - - - - - - - - 3

TABLES:

No. 1. General Total.—Number of Persons reported as killed or injured on the Railways of the United Kingdom, distinguishing between Passengers, Servants of the Companies or of Contractors, and other Persons; and distinguishing also in the case of the two former Classes between Accidents caused by accidents to trains, rolling-stock, permanent-way, &c., and Accidents happening otherwise - - - - - - - - - 7

No. 2. Number of Persons reported as killed or injured in the United Kingdom, by the travelling of trains or the movement of vehicles used exclusively upon Railways, distinguishing between Passengers, Servants of Railway Companies, and other Persons; and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - 8

No. 3. Accidents to Trains, Rolling-Stock, Permanent-Way, &c. on the Railways in the United Kingdom, distinguishing the different Classes of Accidents, and the Number of Passengers and others, and of Servants of Railway Companies, killed or injured in each Class of Accident - 9

No. 4. Accidents to Trains, Rolling-Stock, Permanent-Way, &c. on the Railways in the United Kingdom, distinguishing the different Classes of Accidents, the different Railways on which the same have occurred, and the Number of Passengers and others, and of Servants of Railway Companies, killed or injured on each Railway by those Accidents - - - 10

No. 5. Number of Servants of Railway Companies and Contractors reported as killed or injured on the Railways in the United Kingdom, by the travelling of trains or the movement of vehicles used exclusively upon Railways, distinguishing the Number which have occurred on each Railway or System of Railway, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - - - - - 14

No. 6. Table showing the different occupations of Servants of Railway Companies and Contractors who were killed or injured, and classifying their injuries as far as practicable - 18

No. 7. Number of Persons reported as having been killed or injured whilst upon the Companies' premises, by accidents in which the movement of vehicles used exclusively upon Railways was not concerned, distinguishing between Passengers, Servants of Companies, and other Persons; and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - - - - - - - - - 19

REPORTS ON ACCIDENTS INQUIRED INTO - - - - - - - 21

Summary of Accidents and Casualties which have been reported to the Board of Trade as having occurred upon the Railways in the United Kingdom during the Year ending 31st December 1893.

I.—Accidents to Trains, Rolling-Stock, Permanent-Way, &c.

Accidents to trains, rolling-stock, permanent-way, &c. caused the death of 27 persons and injury to 557 persons, viz. :—

	Killed.	Injured.	*Total for the Year 1892.*	
			Killed.	*Injured.*
Passengers	17	484	*21*	*601*
Servants of companies	10	73	*9*	*92*
Total	27	557	*30*	*693*

During the year there were reported 27 collisions between passenger trains or parts of passenger trains, by which 86 passengers and 5 servants were injured; 45 collisions between passenger trains and goods or mineral trains, &c., by which 157 passengers and 11 servants were injured; 20 collisions between goods trains or parts of goods trains, by which 1 servant was killed, and 17 were injured; 2 cases of trains coming in contact with projections from other trains travelling on parallel lines, by which 1 servant was killed and 3 passengers were injured; 54 cases of passenger trains or parts of passenger trains leaving the rails, by which 15 passengers and 5 servants were killed and 82 passengers and 11 servants were injured; 11 cases of goods trains or parts of goods trains leaving the rails, by which 1 servant was killed and 2 were injured; 7 cases of trains or engines travelling in the wrong direction through points, by which 1 servant was killed and 5 passengers and 1 servant were injured; 23 cases of trains running into stations or sidings at too high a speed, by which 121 passengers and 5 servants were injured; 162 cases of trains running over cattle* or other obstructions on the line, by which 1 person was killed and 16 passengers and other persons were injured; 40 cases of trains running through gates at level crossings, by which 1 passenger was killed and 1 servant and 2 other persons were injured; 4 cases of the bursting of tubes of engines by which 1 servant was injured; 10 cases of the failure of machinery, springs, &c., of engines, by which 4 servants were injured; 468 cases of failures of tyres, by which 2 passengers and 1 servant were injured; 193 cases of the failure of axles by which 1 servant was injured; 18 failures of couplings, by which 1 passenger and 7 servants were injured; 1 case of the failure of ropes used in working inclines by which 1 servant was injured; 4 cases of slips in cuttings or embankments, by which 1 servant was killed and 5 passengers were injured; and 4 other accidents by which 4 passengers and 5 servants were injured.

The following cases were also reported, but they involved no personal injury:—1 case of the failure of a wheel; 264 failures of rails; 3 failures of tunnels, &c.; 1 case of the flooding of a portion of the permanent way; 4 cases of fires in trains; and 6 fires at stations.

Of the 468 tyres which failed, 21 were engine-tyres, 7 were tender-tyres, 4 were coach-tyres, 16 were van-tyres, and 420 were waggon-tyres; of the waggons, 385 belonged to owners other than the Railway Companies; 331 tyres were made of iron, 136 of steel, and in one case the material was not stated; 7 of the tyres were fastened to the wheels by Mansell's patent method, 1 of which left its wheel when

* During the 12 months 44 horses, 39 beasts and cows, 96 sheep, 4 donkeys, 3 pigs, and 1 goat were run over and killed, and 4 horses, 2 beasts, and 4 sheep were injured.

it failed; 9 by Gibson's patent method; 397 by bolts or rivets, 5 of which left their wheels when they failed; 49 by other methods, 4 of which left their wheels when they failed; and 6 by methods which were not stated; 37 tyres broke at rivet-holes, 1 in the weld, 113 in the solid, and 317 split longitudinally or bulged.

Of the 193 axles which failed, 126 were engine axles, viz., 101 crank or driving, and 25 leading or trailing; 14 were tender axles, 3 were coach axles, and 50 were waggon axles; of the waggons, 18 belonged to owners other than the Railway Companies. Of the 101 crank or driving axles, 37 were made of iron and 64 of steel. The average mileage of 33 crank or driving axles made of iron was 260,659 miles, and of 59 crank or driving axles made of steel 294,234 miles.

Of the 264 rails which broke, 98 were double-headed, 148 were single-headed, 3 were of the bridge pattern, and 15 were Vignoles' rails; of the double-headed rails 56 had been turned; 13 rails were made of iron and 251 of steel.

II.—Accidents to Passengers from Causes other than Accidents to Trains, Rolling-Stock, Permanent-Way, &c.; including Accidents from their own want of Caution or Misconduct; Accidents to Persons passing over Level-Crossings; Trespassers; and Others.

Of the 534 persons killed and 994 injured in this division, 89 of the killed and 737 of the injured were passengers. Of these 19 were killed and 50 injured by falling between carriages and platforms, viz., 9 killed and 27 injured when getting into, and 10 killed and 23 injured when alighting from, trains; 15 were killed and 428 injured by falling on to platforms, ballast, &c., viz., 3 killed and 48 injured when getting into, and 12 killed and 380 injured when alighting from, trains; 21 were killed and 13 injured whilst passing over the line at stations; 1 was killed and 82 injured by the closing of carriage doors; 11 were killed and 51 injured by falling out of carriages during the travelling of trains; and 22 were killed and 113 injured from other causes. 55 persons were killed and 30 injured whilst passing over railways at level-crossings, viz., 37 killed and 17 injured at public level-crossings, 10 killed and 10 injured at occupation-crossings, and 8 killed and 3 injured at foot-crossings. 274 persons were killed and 135 injured when trespassing on the railways; 86 persons committed suicide on railways; and of other persons not specifically classed, but mostly private people having business on the companies' premises, 30 were killed and 92 injured.

III.—Accidents to Servants in the Employ of Railway Companies or Contractors, caused by the Travelling of Trains or the Movement of Vehicles used exclusively upon Railways.

During the year there were 450 servants of companies or contractors reported as having been killed and 2,558 injured, in addition to those included in Division I. Of these 11 were killed and 286 injured whilst coupling or uncoupling vehicles; 5 were killed and 25 injured by coming in contact, whilst riding on vehicles during shunting, with other vehicles, &c. standing on adjacent lines; 2 were killed and 24 were injured whilst passing over or standing upon buffers during shunting; 10 were killed and 195 injured in getting on or off, or by falling off engines, waggons, &c. during shunting; 7 were killed and 192 injured whilst breaking, spragging, or chocking wheels; 3 were killed and 30 injured whilst attending to ground-points, marshalling trains, &c.; 18 were killed and 227 injured whilst moving vehicles by capstans, turn-tables, props, &c. during shunting, and 69 were killed and 468 injured by various other accidents during shunting operations; 7 were killed and 51 injured by falling off engines, &c. during the travelling of trains; 3 were killed and 38 injured by coming in contact with over-bridges or erections on the sides of the line during the travelling of trains; 6 were killed and 102 injured whilst getting on or off engines, vans, &c., during the travelling of trains; 8 were killed and 425 injured whilst attending to, or by the failure of, machinery, &c. of engines in steam; 73 were killed and 77 injured whilst working on the permanent-way, sidings, &c.; 3 were killed and 4 injured whilst attending to level-crossing gates; 164 were killed and 183 injured whilst walking,

crossing, or standing on the line on duty; 15 were killed and 57 injured by being caught between vehicles; 12 were killed and 42 injured by falling or being caught between trains and platforms, walls, &c.; 30 were killed and 14 injured whilst walking, &c. on the line on the way home or to work; and 4 were killed and 138 injured from various other causes.

Altogether, the number of persons killed and injured on railways in the United Kingdom in the course of public traffic, during the year ending 31st December 1893, as reported to the Board of Trade, was as follows :—

	Killed.	Injured.	*Total for the Year 1892.*		Increase.		Decrease.	
			Killed.	*Injured.*	Killed.	Injured.	Killed.	Injured.
Passengers:								
From accidents to trains, rolling-stock, permanent-way, &c.	17	484	*21*	*601*	—	—	4	117
By accidents from other causes -	89	737	*108*	*747*	—	—	19	10
Servants of companies or contractors :*								
From accidents to trains, rolling-stock, permanent-way, &c.	10	73	*9*	*92*	1	—	—	19
By accidents from other causes -	450	2,558	*525*	*2,823*	—	—	75	265
Persons passing over railways at level-crossings.	55	30	77	*21*	—	9	22	—
Trespassers (including suicides) - -	360	135	*347*	*121*	13	14	—	—
Other persons not coming in above classification.	30	92	*43*	*80*	—	12	13	—
Total - - - - -	1,011	4,109	*1,130*	*4,485*	—	—	119	376

* Of contractors' servants 14 were killed and 15 injured.

Note.—In addition to the above, the Railway Companies have reported to the Board of Trade, in pursuance of the 6th Section of the Regulation of Railways Act, 1871, the following accidents which occurred upon their premises, but in which the movement of vehicles used exclusively upon railways was not concerned, namely:—4 passengers killed and 141 injured whilst ascending or descending steps at stations; 42 injured by being struck by barrows, falling over packages, &c. on station platforms; 35 injured by falling off platforms; and 3 killed and 94 injured from other causes. Of servants of companies or contractors, 7 killed and 1,340 injured whilst loading, unloading, or sheeting waggons; 247 injured whilst moving or carrying goods in warehouses, &c.; 3 killed and 114 injured whilst working at cranes or capstans; 4 killed and 202 injured by the falling of waggon-doors, lamps, bales of goods, &c.; 3 killed and 289 injured by falling off, or when getting on or off, stationary engines or vehicles; 16 killed and 396 injured by falling off platforms, ladders, scaffolds, &c.; 3 killed and 319 injured by stumbling whilst walking on the line or platforms; 1 killed and 231 injured whilst attending to stationary engines in sheds; 1 killed and 47 injured by being trampled on or kicked by horses; 12 killed and 625 injured whilst working on the line or in sidings; and 6 killed and 394 injured from various other causes. Of other persons, most of whom were transacting business on the companies' premises, 17 were killed and 171 injured—making a total in this class of accidents of 80 persons killed and 4,687 injured.

Thus the total number of personal accidents reported to the Board of Trade by the several Railway Companies during the year amounts to 1,091 persons killed and 8,796 injured.

TABLE No. 1.

GENERAL TOTAL.

NUMBER of PERSONS reported, during the Year ending 31st December 1893, as KILLED or INJURED on the RAILWAYS of the UNITED KINGDOM, distinguishing between PASSENGERS, SERVANTS of the COMPANIES or of CONTRACTORS, and OTHER PERSONS; and distinguishing also in the case of the Two former Classes between ACCIDENTS caused by ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c., and ACCIDENTS happening otherwise.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, rolling-stock, permanent-way, &c. -	17	428	–	36	–	20	17	484
By accidents from other causes, including accidents from their own want of caution or misconduct - - -	73	679	8	48	8	10	89	737
SERVANTS:—								
From accidents to trains, rolling-stock, permanent-way, &c. -	4	59	3	13	3	1	10	73
By accidents from other causes, including accidents from their own want of caution or misconduct - - - -	353	2,231	75	301	22	26	450	2,558
OTHER PERSONS:—								
Whilst passing over railways at level-crossings - -	49	28	5	2	1	–	55	30
Trespassers - - - -	198	94	63	39	13	2	274	135
Suicides - - - - -	71	–	14	–	1	–	86	–
Miscellaneous, not included in either of the above - -	26	77	2	15	2	–	30	92
TOTAL - -	791	3,596	170	454	50	59	1,011	4,109

N.B.—The Board of Trade state the cause of accident as returned by the Companies, but do not guarantee or otherwise adopt the statement, except in cases where an official inquiry has been held.

TABLE No. 2.

NUMBER of PERSONS reported, during the Year ending 31st December 1893, as KILLED or INJURED in the UNITED KINGDOM by the TRAVELLING of TRAINS or the MOVEMENT of VEHICLES used exclusively upon RAILWAYS, distinguishing between PASSENGERS, SERVANTS of RAILWAY COMPANIES, and OTHER PERSONS, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, &c., *see Table No. 3*	17	428	–	36	–	20	17	484
From falling between trains and platforms	14	38	1	10	4	2	19	50
From falling on to the platform, ballast, &c. when getting into or out of trains	10	408	3	20	2	–	15	428
Whilst crossing the line at stations	19	13	2	–	–	–	21	13
By the closing of carriage doors	1	80	–	2	–	–	1	82
From falling out of carriages during the travelling of trains	9	39	1	6	1	6	11	51
By other accidents	20	101	1	10	1	2	22	113
TOTAL	90	1,107	8	84	8	30	106	1,221
SERVANTS:—								
From accidents to trains, &c., *see Table No. 3*	4	59	3	13	3	1	10	73
Whilst coupling or uncoupling vehicles	9	231	2	49	–	6	11	286
By coming in contact, whilst riding on vehicles during shunting, with other vehicles, &c. standing on adjacent lines	4	20	1	5	–	–	5	25
Whilst passing over or standing upon buffers during shunting	–	8	2	16	–	–	2	24
When getting on or off, or falling off, engines, waggons, &c. during shunting	8	165	2	25	–	5	10	195
Whilst braking, spragging, or chocking wheels	5	145	2	26	–	1	7	172
Whilst attending to ground-points, marshalling trains, &c.	2	23	–	6	1	1	3	30
Whilst moving vehicles by capstans, turn-tables, props, &c. during shunting	13	207	4	18	1	2	18	227
By other accidents during shunting operations, not included in the preceding	59	417	3	50	7	1	69	468
From falling off engines, &c. during the travelling of trains	6	38	–	12	1	1	7	51
By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains	3	28	–	9	–	1	3	38
When getting on or off engines, vans, &c. during the travelling of trains	5	92	1	9	–	1	6	102
Whilst attending to, or by the failure of, machinery, &c. of engines in steam	8	402	–	23	–	–	8	425
Whilst working on the permanent-way, sidings, &c.	59	64	13	11	1	2	73	77
Whilst attending to gates at level-crossings	1	4	1	–	1	–	3	4
Whilst walking, crossing, or standing on the line on duty	127	157	30	26	7	–	164	183
From being caught between vehicles	13	51	2	4	–	2	15	57
From falling or being caught between trains and platforms, walls, &c.	9	37	2	5	1	–	12	42
Whilst walking, &c. along the line on the way home or to work	21	11	7	1	2	2	30	14
Miscellaneous	1	131	3	6	–	1	4	138
TOTAL	357	2,290	78	314	25	27	460	2,631
OTHER PERSONS:—								
Whilst passing over railways at level-crossings	49	28	5	2	1	–	55	30
Trespassers	198	94	63	39	13	2	274	135
Suicides	71	–	14	–	1	–	86	–
Miscellaneous	26	77	2	15	2	–	30	92
TOTAL	344	199	84	56	17	2	445	257
SUMMARY:—								
Passengers	90	1,107	8	84	8	30	106	1,221
Servants	357	2,290	78	314	25	27	460	2,631
Other persons	344	199	84	56	17	2	445	257
TOTAL ALL CLASSES	791	3,596	170	454	50	59	1,011	4,109

TABLE No. 3.

ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c. reported, during the Year ending 3
as having occurred on the RAILWAYS in the UNITED KINGDOM, distinguishing the different Classes o
Number of Passengers and others, and of Servants of Railway Companies, KILLED or INJURED in each Cla

	NUMBER OF CASES.				NUMBER OF PASSENGERS AND OTHERS.								NUMBER			
					England and Wales.		Scotland.		Ireland.		United Kingdom.		England and Wales.		Scotland	
	England and Wales.	Scotland.	Ireland.	United Kingdom.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions between passenger trains or parts of passenger trains	23	4	–	27	–	71	–	15	–	–	–	86	–	1	–	4
Collisions between passenger trains and goods or mineral trains, engines, and vehicles standing foul of the line	39	4	2	45	–	147	–	4	–	6	–	157	–	9	–	2
Collisions between goods trains or parts of goods trains	17	3	–	20	–	–	–	–	–	–	–	–	1	15	–	2
Trains coming in contact with projections from other trains travelling on parallel lines	2	–	–	2	–	3	–	–	–	–	–	3	1	–	–	
Passenger trains or parts of passenger trains leaving the rails	34	11	9	54	15	66	–	2	–	14	15	82	1	11	1	
Goods trains or parts of goods trains, engines, &c. leaving the rails	7	2	2	11	–	–	–	–	–	–	–	–	–	–	1	
Trains or engines travelling in the wrong direction through points	3	3	1	7	–	2	–	3	–	–	–	5	–	–	1	
Trains running into stations or sidings at too high a speed	21	2	–	23	–	111	–	10	–	–	–	121	–	5	–	
Trains running over cattle or other obstructions on the line	114	37	11	162	1	14	–	2	–	–	1	16	–	–	–	
Trains running through gates at level-crossings	38	–	2	40	1	2	–	–	–	–	1	2	–	1	–	
The bursting of boilers or tubes, &c. of engines	3	–	1	4	–	–	–	–	–	–	–	–	–	1	–	
The failure of machinery, springs, &c. of engines	9	–	1	10	–	–	–	–	–	–	–	–	–	4	–	
The failure of tyres	440	27	1	468	–	2	–	–	–	–	–	2	–	–	–	
„ „ wheels	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	
„ „ axles	124	63	6	193	–	–	–	–	–	–	–	–	–	1	–	
„ „ brake apparatus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
„ „ couplings	15	1	2	18	–	1	–	–	–	–	–	1	–	5	–	
„ „ ropes used in working inclines	1	–	–	1	–	–	–	–	–	–	–	–	–	1	–	
„ „ tunnels, bridges, viaducts, culverts, &c.	1	2	–	3	–	–	–	–	–	–	–	–	–	–	–	
Broken rails	219	36	9	264	–	–	–	–	–	–	–	–	–	–	–	
The flooding of portions of permanent-way	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	
Slips in cuttings or embankments	4	–	–	4	–	5	–	–	–	–	–	5	1	–	–	
Fire in trains	3	1	–	4	–	–	–	–	–	–	–	–	–	–	–	
Fire at stations or involving injury to bridges or viaducts	6	–	–	6	–	–	–	–	–	–	–	–	–	–	–	
Other accidents	3	1	–	4	–	4	–	–	–	–	–	4	–	5	–	
	TOTAL				17	428	–	36	–	20	17	484	4	59	3	1

TABLE No. 4.

CIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c. on the RAILWAYS in the UNITED KINGDOM, reported RAILWAYS on which the same have occurred, and the Number of Passengers and others, and of

NAME OF COMPANY.	Collisions between passenger trains or parts of passenger trains.	Collisions between passenger trains and goods or mineral trains, engines, &c.	Collisions between goods trains or parts of goods trains.	Trains coming in contact with projections from other trains travelling on parallel lines.	Passenger trains or parts of passenger trains leaving the rails.	Goods trains or parts of goods trains, engines, &c. leaving the rails.	Trains or engines travelling in the wrong direction through points.	Trains running into stations or sidings at too high a speed.	Trains running over cattle or other obstructions on the line.	Trains running through gates at level-crossings.	The bursting of boilers or tubes, &c. of engines.	The failure of machinery, springs, &c. of engines.	The failure of tyres.
NGLAND AND WALES.													
rry	–	–	–	–	–	–	–	–	–	–	–	1	–
econ and Merthyr Junction	–	–	–	–	–	–	–	–	–	–	–	–	2
mbrian	–	–	–	–	–	–	–	–	–	–	–	–	–
eshire Lines	–	1	–	–	–	–	–	–	–	–	–	–	–
stiniog	–	–	–	–	–	–	–	–	1	–	–	–	–
rness	–	–	–	–	–	–	–	–	–	–	–	–	–
eat Eastern	2	1	–	–	12	–	1	2	18	8	1	1	12
eat Northern	1	4	3	–	–	–	–	2	–	–	–	–	4
eat Western	1	3	–	–	2	–	1	1	20	13	–	2	11
ull, Barnsley, and West Riding Junction.	–	–	–	–	1	–	–	–	–	–	–	1	–
e of Wight	–	–	–	–	–	1	–	–	–	–	–	–	–
le of Wight Central	–	–	–	–	–	–	–	–	–	–	–	–	–
ncashire and Yorkshire	6	6	7	–	–	–	–	1	17	1	–	3	1
ancashire and Yorkshire and London and North-Western.	–	–	–	–	1	–	–	1	–	–	–	–	–
verpool Overhead	–	–	–	–	–	–	–	1	–	–	–	–	–
ndon and North-Western	1	4	1	1	3	1	–	5	–	1	–	–	17
ndon and North-Western and Great Western.	–	1	1	1	1	–	–	–	1	–	–	–	–
ndon and South-Western	3	2	2	–	2	–	–	1	3	8	–	–	6
ndon and South-Western and London, Brighton, and South Coast.	–	–	–	–	–	–	–	–	–	–	–	–	–
ondon, Brighton, and South Coast.	1	2	1	–	1	1	–	1	4	1	1	–	1
ondon, Chatham, and Dover	1	1	–	–	–	–	–	–	–	–	–	–	–
ondon, Tilbury, and Southend.	–	–	–	–	–	–	–	–	2	–	–	–	–
anchester, Sheffield, and Lincolnshire.	–	1	1	–	–	–	–	1	1	–	–	–	1
aryport and Carlisle	–	–	–	–	–	–	–	–	–	–	–	–	–
ersey	–	–	–	–	1	–	–	–	–	–	–	–	–
etropolitan	–	–	–	–	–	–	–	2	–	–	–	–	1
idland	–	2	–	–	1	–	–	2	–	–	–	–	9
idland and Great Western	–	1	–	–	–	–	–	–	–	–	–	–	–
idland and South-Western Junction.	1	–	–	–	–	–	–	–	–	–	–	–	–
eath and Brecon	–	–	–	–	1	4	–	–	1	–	–	–	–
orth-Eastern	3	4	1	–	6	–	–	1	44	5	1	1	5
orth and South-Western Junction.	–	–	–	–	–	–	–	–	1	–	–	–	–
orth London	–	1	–	–	–	–	–	–	–	–	–	–	–

TABLE No. 4.

during the Year ending 31st December 1893, distinguishing the different CLASSES of ACCIDENTS, the different the Servants of Railway Companies, KILLED or INJURED on each Railway by those Accidents.

The failure of wheels.	The failure of axles.	The failure of brake apparatus.	The failure of couplings.	The failure of ropes used in working inclines.	The failure of tunnels, bridges, viaducts, or culverts.	Broken rails.	The flooding of portions of permanent-way.	Slips in cuttings or embankments.	Fire in trains.	Fire at stations or involving injury to bridges or viaducts.	Other accidents.	Number of Passengers and others.		Number of Servants.		Total all Classes.	
												Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	9	–	1	–	10
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	13	–	–	–	–	–	–	–	–	–	–	–
–	3	–	–	–	–	3	1	–	–	–	–	–	20	–	1	–	21
–	2	–	–	–	–	16	–	–	–	–	–	–	35	–	6	–	41
–	24	–	3	–	1	23	–	2	–	4	1	–	20	–	8	–	28
–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	3	–	–	7	–	–	–	–	–	–	87	–	9	–	96
–	–	–	–	–	–	–	–	–	–	–	–	2	50	1	–	3	50
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	40	–	–	–	–	33	–	–	1	–	–	–	57	1	6	1	63
–	–	–	–	–	–	5	–	–	–	–	–	–	1	1	1	1	2
–	3	–	3	–	–	23	–	1	2	–	–	–	11	–	4	–	15
–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	2	–	3
–	4	–	4	–	–	24	–	–	–	–	–	–	3	–	1	–	4
–	2	–	–	–	–	17	–	–	–	–	–	–	4	–	1	–	5
–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	1	1
–	–	–	–	–	–	5	–	–	–	–	–	–	7	–	1	–	8
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		–
–	–	–	–	–	–	15	–	–	–	–	–	–	42	–	3	–	45
–	8	–	–	–	–	12	–	–	–	–	–	–	12	1	–	–	12
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–
–	19	–	–	1	–	17	–	–	–	2	1	–	48	–	7	–	55
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	2	–	–	–	2

[Continued on next page.

TABLE No. 4.—Number of Accidents to Trains,

NAME OF COMPANY.	Collisions between passenger trains or parts of passenger trains.	Collisions between passenger trains and goods or mineral trains, engines, &c.	Collisions between goods trains or parts of goods trains.	Trains coming in contact with projections from other trains travelling on parallel lines.	Passenger trains or parts of passenger trains leaving the rails.	Goods trains or parts of goods trains, engines, &c. leaving the rails.	Trains or engines travelling in the wrong direction through points.	Trains running into stations or sidings at too high a speed.	Trains running over cattle or other obstructions on the line.	Trains running through gates at level-crossings.	The bursting of boilers or tubes, &c. of engines.	The failure of machinery, springs, &c. of engines.	The failure of tyres.
North Staffordshire	–	–	–	–	–	–	–	–	–	–	–	–	3
Sheffield and Midland Joint	1	1	–	–	1	–	–	–	–	–	–	–	–
Somerset and Dorset	–	–	–	–	–	–	–	–	1	–	–	–	–
South Eastern	2	4	–	–	–	–	1	–	–	1	–	–	1
Taff Vale	–	–	–	–	1	–	–	–	–	–	–	–	–
West Lancashire	–	–	–	–	–	–	–	–	–	–	–	–	–
Private Owners	–	–	–	–	–	–	–	–	–	–	–	–	366
TOTAL, ENGLAND AND WALES	23	39	17	2	34	7	3	21	114	38	3	9	440
SCOTLAND.													
Aberdeen Joint Station	–	–	–	–	1	–	–	–	–	–	–	–	–
Caledonian	–	–	–	–	2	–	1	1	23	–	–	–	16
City of Glasgow Union	–	–	1	–	–	–	–	–	–	–	–	–	–
Dundee and Arbroath	–	–	–	–	–	–	–	–	1	–	–	–	–
Glasgow and South-Western	2	1	1	–	2	–	–	1	1	–	4	–	1
Great North of Scotland	1	–	–	–	–	–	1	–	1	–	–	–	2
Highland	–	1	–	–	1	–	–	–	1	–	–	–	1
North British	1	2	1	–	4	1	1	–	10	–	–	–	6
Portpatrick and Wigtownshire	–	–	–	–	1	1	–	–		–	–	–	–
Private Owners	–	–	–	–	–	–	–	–	–	–	–	–	1
TOTAL, SCOTLAND	4	4	3	–	11	2	3	2	37	–	–	–	27
IRELAND.													
Belfast and Northern Counties	–	1	–	–	3	–	–	–	–	–	–	–	–
Bessbrook and Newry	–	–	–	–	2	2	–	–	–	–	–	–	–
Cavan, Leitrim, and Roscommon.	–	–	–	–	1	–	–	–	2	1	–	–	–
Clogher Valley	–	–	–	–	–	–	–	–	–	–	1	–	–
Cork, Blackrock and Passage	–	–	–	–	–	–	–	–	–	–	–	–	–
Dublin, Wicklow, and Wexford	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Northern of Ireland	–	–	–	–	–	–	–	–	1	–	–	1	–
Great Southern and Western of Ireland.	–	1	–	–	1	–	–	–	–	–	–	–	–
Midland Great Western of Ireland.	–	–	–	–	–	–	–	–	–	–	–	–	1
Sligo, Leitrim, and Northern Counties.	–	–	–	–	–	–	1	–	–	–	–	–	–
Tralee and Dingle	–	–	–	–	1	–	–	–	–	–	–	–	–
Waterford and Central Ireland	–	–	–	–	–	–	–	–	1	–	–	–	–
Waterford and Limerick	–	–	–	–	1	–	–	–	7	1	–	–	–
TOTAL, IRELAND	–	2	–	–	9	2	1	–	11	2	1	1	1
TOTAL, UNITED KINGDOM	**27**	**45**	**20**	**2**	**54**	**11**	**7**	**23**	**162**	**40**	**4**	**10**	**468**

Rolling-Stock, Permanent-Way, &c.—*continued.*

The failure of wheels.	The failure of axles.	The failure of brake apparatus.	The failure of couplings.	The failure of ropes used in working inclines.	The failure of tunnels, bridges, viaducts, or culverts.	Broken rails.	The flooding of portions of permanent-way.	Slips in cuttings or embankments.	Fire in trains.	Fire at stations or involving injury to bridges or viaducts.	Other accidents.	Number of Passengers and others.		Number of Servants.		Total all Classes.	
												Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
–	1	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	4	–	1	–	5
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	1	6	–	–	1	6
–	–	–	1	–	–	–	–	–	–	–	–	13	7	–	6	13	13
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	124	–	15	1	1	219	1	4	3	6	3	17	428	4	59	21	487
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
–	31	–	–	–	–	15	–	–	–	–	–	–	5	1	–	1	5
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
–	1	–	–	–	–	1	–	–	1	–	1	–	14	–	2	–	16
–	2	–	1	–	1	–	–	–	–	–	–	–	9	1	2	1	11
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2
–	23	–	–	–	1	19	–	–	–	–	–	–	6	1	7	1	13
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	63	–	1	–	2	36	–	–	1	–	1	–	36	3	13	3	49
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	3	–	–	–	–	–	–	6	–	–	–	6
–	1	–	–	–	–	6	–	–	–	–	–	–	–	–	–	–	–
–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	14	3	–	3	14
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	6	–	2	–	–	9	–	–	–	–	–	–	20	3	1	3	21
1	**193**	–	**18**	**1**	**3**	**264**	**1**	**4**	**4**	**6**	**4**	**17**	**484**	**10**	**73**	**27**	**557**

TABLE No. 5.

NUMBER of SERVANTS of RAILWAY COMPANIES and CONTRACTORS reported, during the the Year ending 31
used exclusively upon RAILWAYS, distinguishing the Number which have occurred on each Railway or System o

NAME OF COMPANY.	From accidents to trains, &c. *See* Table No. 4.		Whilst coupling or uncoupling vehicles.		By coming in contact whilst riding on vehicles during shunting with other vehicles, &c. standing on adjacent lines.		Whilst passing over, or standing upon, buffers during shunting.		When getting on or off, or falling off, engines, waggons, &c. during shunting.		Whilst braking, spragging, or chocking wheels.		Whilst attending to ground-points, marshalling trains, &c.		Whilst moving vehicles by capstans, turntables, props, &c. during shunting.		By other accidents during shunting operations not included in the preceding.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
ENGLAND AND WALES.																		
Barry	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
Brecon and Merthyr Junction	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	2
Cambrian	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Cheshire Lines Committee	–	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	2	–
Furness	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Great Eastern	–	1	1	2	1	1	–	–	–	2	1	2	–	–	2	6	2	8
Great Northern	–	6	–	12	–	1	–	–	–	3	–	5	–	2	2	14	6	18
Great Northern and Great Eastern Joint.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Northern and London and North-Western.	–	1	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Northern and Manchester, Sheffield, and Lincolnshire Junction.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Western	–	8	–	30	–	4	–	–	1	34	–	20	–	4	1	21	5	44
Hull, Barnsley, and West Riding	–	1	–	1	–	–	–	–	–	2	–	2	–	–	–	1	–	2
Lancashire and Yorkshire	–	9	2	35	–	1	–	1	1	29	–	36	–	3	1	42	6	78
Lancashire and Yorkshire and London and North-Western.	1	–	–	1	–	–	–	–	–	1	–	–	–	1	–	1	1	2
Liverpool Overhead	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
London and North-Western	1	5	1	80	–	2	–	1	2	50	1	37	–	10	4	73	7	121
London and North-Western and Great Western Joint.	1	1	1	3	–	–	–	–	1	2	–	2	–	1	–	–	1	6
London and South-Western	–	4	1	6	–	–	–	–	–	6	1	1	–	–	–	3	7	21
London and South-Western and London, Brighton, and South Coast	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
London, Brighton, and South Coast	–	1	–	1	–	–	–	–	–	2	–	2	–	–	–	5	1	11
London, Chatham, and Dover	–	1	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	1
London, Tilbury, and Southend	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–
Manchester, Sheffield, and Lincolnshire	–	1	–	7	1	–	–	–	–	1	–	5	–	–	–	5	4	7
Maryport and Carlisle	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Mersey	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
Metropolitan	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Metropolitan and Metropolitan District.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Metropolitan District	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Midland	1	–	–	3	–	1	–	–	2	9	–	2	–	–	–	2	5	14
Midland and Great Northern	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Midland, and Great Western Joint	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Midland and South-Western Junction	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Neath and Brecon	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North-Eastern	–	7	2	35	2	8	–	4	1	16	1	26	1	2	2	26	4	63
North London	–	–	–	–	–	1	–	–	–	1	–	1	–	–	–	–	1	9
North Staffordshire	–	–	–	1	–	1	–	–	–	–	1	–	–	–	–	–	1	2
North and South-Western Junction	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Oldham, Ashton-under-Lyne, and Guide Bridge Junction,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–

TABLE No. 5.

mber 1893, as KILLED or INJURED in the UNITED KINGDOM by the TRAVELLING of TRAINS or the MOVEMENT of VEHICLES way, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury.

rom ng off nes. during travel- g of ains.		By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains.		When getting on or off engines, vans, &c. during the travelling of trains.		Whilst attending to, or by the failure of, machinery, &c. of engines in steam.		Whilst working on the permanent-way, sidings, &c.		Whilst attending to gates at level-crossings.		Whilst walking, crossing, or standing on the line on duty.		From being caught between vehicles.		From falling or being caught between trains and platforms, walls, &c.		Whilst walking, &c. on the line on the way home or to work.		Mis-cellaneous.		TOTAL.	
d.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.
1		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
–		–	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2	3
–		–	–	–	–	–	–	1	1	–	–	1	–	1	1	–	–	–	–	–	–	6	4
–		–	–	–	–	–	–	–	–	–	–	1	2	–	–	–	–	–	–	–	–	1	4
1		–	–	–	–	–	7	3	6	–	2	15	16	–	–	1	1	1	–	–	2	28	57
1		–	1	1	3	–	5	5	1	–	–	10	11	–	2	–	5	1	1	1	4	26	95
–		–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–		–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–
2		–	2	–	17	–	71	6	7	–	–	17	28	5	4	2	7	4	1	–	28	43	332
–		–	–	–	1	–	1	–	1	–	–	–	2	–	1	–	–	–	–	–	–	–	15
6		–	6	–	10	–	73	3	7	–	–	10	22	–	10	–	5	1	1	–	27	24	401
–		1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	3	7
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
5		1	3	2	23	2	137	10	13	–	–	12	19	1	18	2	6	5	2	–	35	51	640
–		–	1	–	1	–	–	–	1	–	–	–	2	–	–	1	1	–	1	–	2	5	24
3		–	1	–	5	–	8	5	6	–	–	4	3	–	1	1	3	1	–	–	3	21	74
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
4		–	2	–	1	–	1	1	3	–	–	6	6	–	2	–	1	1	1	–	2	9	45
1		1	–	–	2	1	–	2	2	–	–	2	5	–	–	–	–	–	–	–	–	6	14
–		–	–	–	–	–	–	–	–	–	–	2	–	–	–	1	1	–	–	–	–	3	2
3		–	1	–	1	–	2	2	–	–	–	4	1	–	1	–	–	1	–	–	–	13	35
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–		–	–	–	2	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	4
–		–	–	–	–	1	3	–	2	–	–	2	1	–	–	–	–	–	1	–	1	3	11
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
2		–	–	–	–	–	1	–	1	–	–	–	1	–	–	–	1	1	–	–	–	1	6
1		–	–	2	9	1	2	10	3	–	–	13	13	5	3	–	–	2	–	–	5	41	67
–		–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	2	–
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	4
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
5		–	8	–	10	3	85	3	5	–	2	13	15	–	4	–	4	1	1	–	5	33	331
1		–	–	–	3	–	4	1	–	–	–	1	1	–	–	–	–	1	–	–	15	4	36
–		–	–	–	–	–	–	4	–	–	–	1	–	–	–	–	–	–	–	–	–	7	4
–		–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
+		–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2

[*Continued on next page.*

TABLE No. 5.—Number of Servants reported

NAME OF COMPANY.	From accidents to trains, &c. *See* Table No. 4.		Whilst coupling or uncoupling vehicles.		By coming in contact whilst riding on vehicles during shunting with other vehicles, &c. standing on adjacent lines.		Whilst passing over, or standing upon, buffers during shunting.		When getting on or off, or falling off, engines, waggons, &c. during shunting.		Whilst braking, spragging, or chocking wheels.		Whilst attending to ground-points, marshalling trains, &c.		Whilst moving vehicles by capstans, turntables, props, &c. during shunting.		By other accidents during shunting operations not included in the preceding.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Rhondda and Swansea Bay	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rhymney	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Severn and Wye and Severn Bridge	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–
Sheffield and Midland Joint	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Somerset and Dorset	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	1	2
South-Eastern	–	–	1	2	–	–	–	–	–	1	–	–	–	–	–	4	2	3
Stalybridge Joint Station	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Taff Vale	–	6	–	–	–	–	–	–	–	2	–	1	1	–	–	–	1	1
West London Extension	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
West Riding and Grimsby	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL, ENGLAND AND WALES	4	59	9	231	4	20	–	8	8	165	5	145	2	23	13	207	59	417
SCOTLAND.																		
Aberdeen Joint Station	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Caledonian	1	–	–	24	1	2	2	11	1	13	–	15	–	2	1	11	1	26
Caledonian and North British Joint	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
City of Glasgow Union	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dundee and Arbroath	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Glasgow and Paisley Joint	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Glasgow and South-Western	–	2	1	2	–	–	–	2	–	2	1	1	–	–	–	1	–	2
Glasgow, Barrhead, and Kilmarnock	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Great North of Scotland	1	2	1	–	–	–	–	–	–	2	1	–	–	–	–	–	1	1
Highland	–	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
North British	1	7	–	19	–	3	–	3	1	8	–	9	–	3	2	6	1	19
Portpatrick and Girvan Joint	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
TOTAL, SCOTLAND	3	13	2	49	1	5	2	16	2	25	2	26	–	6	4	18	3	50
IRELAND.																		
Belfast and County Down	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Belfast and Northern Counties	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
Bessbrook and Newry	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cork, Bandon, and South Coast	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Dublin, Wicklow, and Wexford	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dundalk, Newry, and Greenore	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Northern of Ireland	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	4	–
Great Southern and Western	–	–	–	1	–	–	–	–	–	1	–	1	1	1	1	1	–	–
Midland Great Western	–	–	–	3	–	–	–	–	–	1	–	–	–	–	–	–	2	1
Tralee and Dingle	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Waterford and Limerick	–	–	–	2	–	–	–	–	–	1	–	–	–	–	–	1	–	–
West Clare	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL, IRELAND	3	1	–	6	–	–	–	–	–	5	–	1	1	1	1	2	7	1
TOTAL, UNITED KINGDOM	10	73	11	286	5	25	2	24	10	195	7	172	3	30	18	227	69	468

Note.—An analysis and comparison of the figures in the Returns of accidents appear to show that the Railway Companies do not report all minu
In estimating, therefore, the reliability of the figures set out, and in comparing the proportion of accidents on the several lines, this difference must b
consideration for adoption with a view to securing greater uniformity and accuracy in the Returns supplied.

Killed or Injured, &c.—*continued.*

From ing off gines, during travel- ng of ains.		By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains.		When getting on or off engines, vans, &c. during the travelling of trains.		Whilst attending to, or by the failure of, machinery, &c. of engines in steam.		Whilst working on the permanent-way, sidings, &c.		Whilst attending to gates at level-crossings.		Whilst walking, crossing, or standing on the line on duty.		From being caught between vehicles.		From falling or being caught between trains and platforms, walls, &c.		Whilst walking, &c. on the line on the way home or to work.		Mis-cellaneous.		Total.	
d.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.
	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2	1
	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	2	1
	–	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	2	6
	1	–	1	–	–	–	–	1	4	1	–	4	7	1	3	–	–	–	1	–	2	10	29
	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	1
	–	–	1	–	2	–	1	1	–	–	–	2	–	–	–	–	–	–	–	–	–	6	14
	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
	38	3	28	5	92	8	402	59	64	1	4	127	157	13	51	9	37	21	11	1	131	357	2,290
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	4	–	3	–	7	–	12	4	5	–	–	17	8	–	1	2	2	2	1	–	–	32	147
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	3	–
	–	–	–	–	–	–	–	1	–	–	–	2	–	–	–	–	–	–	–	–	–	3	2
	2	–	3	–	–	–	5	3	1	–	–	1	3	–	3	–	1	2	–	2	2	10	32
	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	1	–	–	1	3
	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	–	–	5	6
	–	–	–	–	–	–	1	1	–	–	–	1	–	–	–	–	–	1	–	–	–	3	4
	6	–	3	1	2	–	5	4	4	–	–	6	13	2	–	–	1	2	–	1	4	21	115
	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2
	12	–	9	1	9	–	23	13	11	1	–	30	26	2	4	2	5	7	1	3	6	78	314
	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–
	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	1	–	–	–	–	–	2	1
	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
	–	–	–	–	1	–	–	–	–	1	–	1	–	–	1	–	–	–	1	–	–	6	5
	1	–	–	–	–	–	–	–	1	–	–	2	–	–	–	–	–	1	1	–	1	6	9
	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	1	–	–	–	5	5
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
	1	–	1	–	1	–	–	1	2	1	–	7	–	–	2	1	–	2	2	–	1	25	27
	51	3	38	6	102	8	425	73	77	3	4	164	183	15	57	12	42	30	14	4	138	460	2,631

idents on an uniform basis, owing to a difference in their interpretation of the meaning of the provisions of the Regulation of Railways Act, 1871. rne in mind, in fairness to those Companies who habitually report every accident of whatever kind which occurs. Means are, however, under

TABLE No. 6.

TABLE showing the different OCCUPATIONS of SERVANTS of RAILWAY COMPANIES and CONTRACTORS who were KILLED and INJURED during the Year ending 31st December 1893, and classifying their INJURIES as far as practicable.

CLASS OF SERVICE.	Fatal.	Amputations.			Fractures.		Dislocations.	Crushes.			Scalds, Burns.	Sprains, Cuts, or Bruises.	Severe.	Shaken.	Slight.	Unspecified Injury to				Miscellaneous.	Total Injured.
		Legs or Arms.	Feet or Hands.	Toes or Fingers.	Legs or Arms.	Collar-bones or Ribs.		Legs or Arms.	Feet or Hands.	Body.						Head.	Body.	Legs or Arms.	Feet or Hands.		
Brakesmen and Goods-guards	39	6	4	8	15	11	5	8	51	6	4	164	13	4	14	24	37	58	39	2	473
Capstanmen	3	–	–	–	6	–	–	2	6	3	–	6	4	–	1	3	2	11	16	–	60
Carmen	3	–	–	–	–	–	–	–	1	1	–	1	–	–	–	–	–	–	4	–	7
Carriage-cleaners	3	–	–	–	–	–	–	–	3	1	–	4	3	1	2	–	1	3	2	–	20
Carriage or waggon examiners	5	–	1	–	–	–	–	–	–	–	–	5	2	2	–	1	1	2	2	–	16
Checkers	–	–	–	1	1	1	–	–	–	2	–	2	–	–	1	–	1	2	1	1	13
Chockers, Chain-boys, and Slippers.	–	1	–	–	1	1	1	–	5	3	–	4	–	–	–	1	2	6	12	1	38
Clerks	5	–	–	–	1	–	–	–	1	–	–	5	1	1	–	1	–	–	1	–	11
Engine-cleaners	9	–	1	–	3	2	–	1	7	7	–	11	2	1	3	–	4	10	8	1	61
Engine-drivers	25	–	3	1	8	9	4	1	17	1	18	69	20	4	5	14	29	51	25	6	285
Firemen	13	1	4	2	8	5	3	4	33	3	23	106	20	3	18	32	24	42	45	10	386
Gatekeepers	2	1	–	–	–	–	–	–	–	–	–	2	–	–	–	–	1	1	–	–	5
Greasers	7	1	1	–	1	–	–	–	–	1	–	5	1	–	–	2	1	1	2	–	16
Guards, Passenger	5	–	–	–	1	3	–	–	2	–	–	23	4	3	5	3	4	8	3	1	60
Horse-drivers	3	1	1	–	4	1	–	1	6	1	–	7	1	–	–	1	1	3	9	–	37
Inspectors	4	1	–	–	2	1	1	–	–	–	–	2	3	1	–	4	6	1	2	–	24
Labourers	36	3	4	–	7	3	–	1	9	1	1	23	7	1	4	4	2	5	4	–	79
Lampmen	3	–	1	–	1	–	–	1	–	–	–	2	–	–	1	–	–	–	1	–	7
Loaders and Sheeters	2	–	–	–	–	1	–	2	–	1	–	3	–	–	–	–	–	2	–	–	9
Mechanics	14	–	1	–	1	1	–	1	3	–	–	12	3	2	1	4	1	2	4	–	36
Messengers	3	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	3
Number-takers	1	2	1	–	1	–	–	–	3	–	–	3	1	–	–	1	1	2	2	–	17
Permanent-way Men	136	2	4	1	7	4	–	–	7	5	–	33	11	4	6	5	7	10	2	2	110
Pointsmen	1	1	1	–	1	1	–	–	–	1	–	3	1	–	–	–	1	–	–	–	10
Policemen	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Porters	56	2	3	5	21	8	3	6	57	19	1	78	29	4	6	17	20	36	40	1	356
Shunters	33	4	3	–	6	7	4	7	51	7	–	92	14	3	5	9	27	48	44	5	336
Signal-fitters	1	–	–	1	–	–	–	–	1	–	–	1	2	–	–	–	–	2	–	–	7
Signalmen	10	–	–	–	–	1	–	–	1	–	–	10	2	–	–	1	5	–	1	–	21
Station-masters	2	1	–	–	–	–	–	–	–	–	1	3	2	–	1	2	1	3	–	–	14
Ticket-collectors	–	–	–	–	–	–	1	–	–	–	–	3	–	–	2	2	–	2	–	–	10
Watchmen	5	–	–	–	–	1	–	1	–	–	–	1	–	–	–	–	–	–	–	–	3
Yardsmen	2	2	–	–	1	–	–	–	2	–	–	6	1	–	–	1	2	2	2	–	19
Miscellaneous	15	1	1	–	3	2	1	–	10	3	–	11	1	4	1	5	4	11	9	–	67
Contractors' Servants	14	1	–	–	3	–	–	–	2	–	–	2	4	–	1	–	–	1	1	–	15
TOTAL	460	32	35	19	103	63	23	36	278	66	48	702	152	38	77	137	185	326	281	30	2,651

TABLE No. 7.

NUMBER of PERSONS reported, during the Year ending 31st December, 1893, as having been KILLED OF INJURED whilst upon the Companies' Premises, by Accidents in which the Movement of Vehicles used exclusively upon Railways was not concerned, distinguishing between Passengers, Servants of Companies, and other Persons, and classifying, as far as practicable, the Nature and Causes of the Accidents occasioning the Death or Injury.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS :—								
Whilst ascending or descending steps at stations	4	140	—	1	—	—	4	141
By being struck by barrows, by falling over packages, &c. on station platforms	—	41	—	1	—	—	—	42
From falling off platforms	—	35	—	—	—	—	—	35
By other accidents	2	92	1	2	—	—	3	94
TOTAL	6	308	1	4	—	—	7	312
SERVANTS :—								
Whilst loading, unloading, or sheeting waggons	7	1,316	—	21	—	3	7	1,340
Whilst moving or carrying goods in warehouses, &c.	—	246	—	—	—	1	—	247
Whilst working at cranes or capstans	3	112	—	1	—	1	3	114
By the falling of waggon-doors, lamps, bales of goods, &c.	4	198	—	3	—	1	4	202
From falling off, or when getting on or off, stationary engines or vehicles	3	280	—	9	—	—	3	289
From falling off platforms, ladders, scaffolds, &c.	14	385	2	11	—	—	16	396
By stumbling whilst walking on the line or platforms	2	319	—	—	1	—	3	319
Whilst attending to stationary engines in sheds	1	229	—	2	—	—	1	231
By being trampled on or kicked by horses	1	47	—	—	—	—	1	47
Whilst working on the line or in sidings	11	623	1	2	—	—	12	625
Miscellaneous	5	387	—	4	1	3	6	394
TOTAL	51	4,142	3	53	2	9	56	4,204
PERSONS ON BUSINESS AT STATIONS AND OTHERS	16	162	1	7	—	2	17	171
SUMMARY :—								
Passengers	6	308	1	4	—	—	7	312
Servants	51	4,142	3	53	2	9	56	4,204
Persons on business at stations and others	16	162	1	7	—	2	17	171
TOTAL ALL CLASSES	73	4,612	5	64	2	11	80	4,687

Board of Trade,
15th March 1894.

COURTENAY BOYLE.

REPORTS TO THE BOARD OF TRADE BY INSPECTING OFFICERS OF THE RAILWAY DEPARTMENT UPON CERTAIN ACCIDENTS WHICH HAVE BEEN INQUIRED INTO.

	Page.
GREAT EASTERN:	
Major-General Hutchinson's report on the collision that occurred on the 17th October between a passenger train and the buffer-stops at Enfield Town station	23
GREAT NORTHERN:	
Major Marindin's report on the collision that occurred on the 15th November, between a passenger train and four loaded passenger carriages which were standing at the platform at Ramsey station	25
Major Yorke's report on the collision that occurred on the 23rd December between a passenger train and some empty carriages at King's Cross station	28
GREAT SOUTHERN AND WESTERN OF IRELAND:	
Major-General Hutchinson's report on the collision that occurred on the 8th October between a light engine and a passenger train near Roscrea station	36
GREAT WESTERN:	
Major Marindin's report on the collision that occurred on the 26th October between a passenger train and some goods waggons at Droitwich	39
LONDON AND SOUTH-WESTERN AND LONDON, BRIGHTON, AND SOUTH-COAST JOINT:	
Major-General Hutchinson's report on the accident that occurred on the 12th December, when a part of the roof of the arrival platform at Portsmouth Harbour station was blown down during a gale	45
MANCHESTER, SOUTH JUNCTION, AND ALTRINCHAM:	
Major-General Hutchinson's report on the level crossing near Altrincham station, and the accident that occurred there on the	48
MIDLAND:	
Major Marindin's report on the accident that occurred to a passenger train on the 12th December near Ynisygeinon junction through the fall of a mass of earth on to the line	51
NORTH BRITISH:	
Major-General Hutchinson's report on the collision that occurred on the 3rd October between a passenger train and a goods train at Inverkeithing south junction	55
NORTH EASTERN:	
Major Yorke's report on the collision that occurred on the 6th November between a passenger train and a travelling crane at Everingham station	59
Major Yorke's report on the collision that occurred on the 24th November between an engine and the carriages forming its train at West Hartlepool station	65
Major Yorke's report on the accident that occurred on the 27th November to a passenger train through coming in contact with a horse at Ulleskelf station	67
SOUTH-EASTERN:	
Major-General Hutchinson's report on the collision that occurred on the 7th November between a passenger train and some empty carriages, causing the fall of a portion of the roof of Dover Town station	71

For other Reports of Inquiries into Accidents which have occurred during the nine months, *see* [C.—7057.], [C.—7074.], [C.—7194.], and [C.—7245.]

GREAT EASTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
November 22nd, 1893.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 23rd ultimo, the result of my enquiry into the causes of the slight collision with buffer-stops which occurred on the 17th ultimo at Enfield Town terminal station on the Great Eastern Railway.

In this case the 11.56 a.m. down passenger train from Liverpool Street for Enfield Town station came into collision with the buffer-stops at that station.

Seven passengers complained of injury.

The train consisted of a tank engine, with six-coupled wheels, running chimney in front, and nine vehicles fitted throughout with the Westinghouse automatic brake; in it no damage was sustained nor did any wheels leave the rails.

The buffer-stops, which were old, were damaged.

Description.

Enfield Town station is approached for some distance on a rising gradient of 1 in 118, which extends to within about 270 yards of the buffer-stops, the gradient for these 270 yards being still a rising one of 1 in 565; the platform line on which the train ran in is practically straight.

The signal-cabin is 330 yards from the buffer-stops, and the length of the platform is about 210 yards.

Evidence.

1. *Thomas Coe*, signalman; 8½ years' service, six years signalman.—I have been employed three years in the Enfield signal-cabin, where I came on duty at 3.45 a.m. on the 17th to remain till 2.30 p.m., the cabin being open for only 21 hours. Bush Hill Park station, the next signal station, is three-quarters of a mile off. I was first advised of the 11.56 a.m. train by the "Be ready" signal at 12.32 p.m. I accepted the signal and the train was given in at 12.34 p.m. I had lowered my home and distant signals for the train after receiving the "Be ready," and the train passed my cabin at 12.36 p.m., having taken the usual time to run from Bush Hill Park. I noticed nothing unusual in the speed as the engine passed, but I cannot say what the speed was. I did not notice whether steam was off or on when the engine passed. I had turned the train into the front road, the one that train usually runs into. I did not know there had been a collision till 12.45 p.m., when the foreman came and informed me that there had been one; there was nothing off the rails. There had been rain before the train arrived. I have never known a train run into the buffer-stops before.

2. *Thomas Forster*, foreman porter at Enfield; 21 years' service, 17 years foreman porter.—My hours on the 17th October were from 3.40 a.m. to 2.30 p.m. I was standing on the platform about 45 yards from the buffer-stops when the 11.56 a.m. train, due at 12.37 p.m. was running in. In a usual way the engine stops about 15 yards from the buffer-stops. I watched it coming along the platform, and I at first thought the engine would stop at the same place as usual. The engine passed me at a speed of five or six miles an hour and I still thought it would have stopped at the usual place, but instead of doing so, after the speed had slacked a little, it seemed to shoot forward and was running at a speed of three or four miles an hour, when the stops were struck. There was no rebound in the train after it struck, no couplings were broken, and no wheels were off the rails. Steam was shut off when I first saw the engine and was never reapplied. The brakes were not applied when the engine passed me, but I cannot say when they were applied; they were firmly on when I got down to examine the train. A quarter of an hour after the accident I spoke to the driver about it and he said he had applied his brake twice in coming in, and when he came to apply his brake again he found his wheels pick up, and he shot into the stops. The rails were wet and greasy and it was raining at the time. The driver had his hand on the regulator and the fireman was at his brake-wheel when the engine passed. I saw a man with a cut in his forehead in the rear part of the train, but I saw no one else hurt. The station-master's daughter was in a carriage next the engine. The train arrives every day on the same line. When the engine passed me the speed was too great for the train to have been stopped with the hand-brake; it was much the same as usual. I know the rule is to come in at hand-brake speed. I have often spoken to the drivers about this, but have never reported it. Driver Howell is one to whom I spoke five or six months back.

3. *Arthur Prime*, porter guard; 3½ years' service, and about nine months porter guard.—My hours of duty on the 17th October were from 3.40 a.m. to 2.30 p.m. When the engine of the 11.56 a.m. passed me I was standing about 100 yards from the buffer-stops. I was watching the train coming in, and I was not alarmed by its speed, which was as usual, viz., about five miles an hour, when the engine passed me. I could have jumped on to the foot-plate. I could not say whether steam was on or off, but I could hear that the brakes were on as the train passed me, and I do not think they were released after that and they were on after the train had stopped with the rear van close to where I had been standing. I had got on the rear vehicle as it passed me, almost stopped, to change the lamp, when the train shot ahead again and struck the buffers. The blow did not knock me down. I did not feel the brakes released just before the train shot ahead; the driver told me that this was from the

wheels picking up on account of the wet. When the engine passed me the speed was too great, I think, for the train to have been stopped with the hand-brake. I did not see what the driver and fireman were doing when the engine passed me. The rails were wet, and it was raining at the time. I do not think the speed of the engine was faster than usual when it passed me.

4. *John Roberts*, guard; 18 years' service, 14 years guard.—On October 17th I came on duty at 4.51 a.m. to remain till 12.42 p.m. I had been working the Enfield train all the day and left Liverpool Street punctually with the 11.56 a.m. train, consisting of a tank-engine, running chimney in front, and nine vehicles, I being in the rearmost, a third-class brake-carriage. The train was fitted throughout with the Westinghouse brake, which I could apply from my compartment. We kept time at all stations and left Bush Hill Park at 12.34 p.m., being due at Enfield at 12.37 p.m. From Bush Hill Park there would not be more than 20 passengers in the train. I thought the speed was a trifle faster than usual on passing the Enfield cabin, when it was about 25 miles an hour or a little less. I could not say where steam was shut off, but the usual place is shortly before reaching the signal-cabin. The first application of the Westinghouse brake was at the end of the platform, and this at once reduced the speed to about 12 or 13 miles an hour, the brake-gauge having indicated about 65 lbs., rather more than usual. The air-brake was then released, but my hand-brake being on, reduced the speed, as the train was running along by the platform. The speed went on being reduced and I had no fear of any collision till, as I was looking out on the platform side, I found the van did not stop at the usual place, upon which I made for the brake-tap, but was too late to turn it before the engine struck the buffer-stop. I believe the air-gauge still showed 60 lbs. when I made for the brake-tap, but I cannot say whether the driver had applied the brake or not, as I did not notice the air-gauge again. My hand-brake was hard on and had never been released from the time I passed the home-signals. I think the speed was four or five miles an hour when I found we were not stopping at the usual place, and after this the train seemed to glide forward. There was a very slight rebound. I was not knocked down. I had three or four complaints of injuries. I said nothing to my driver. The rails were wet from rain falling at the time.

5. *George Randall*, driver; 29 years' service, two years driver on the London and North-Western Railway and 21 years driver on the Great Eastern Railway.—On October 17th I commenced work at 5.45 a.m., to remain till 3.42 p.m. I am well acquainted with the Enfield line, and the 11.56 a.m. Enfield train was the second one I had brought in on the 17th. My engine was No. 351, a tank-engine with six wheels, all coupled, with inside cylinders. I have had the engine since March 1892, and my fireman for nearly a year. I started punctually from Liverpool Street with the 11.56 a.m. train. I was running with the chimney in front, and a train of nine vehicles, all fitted with the Westinghouse brake. We kept time at all stations, the brake having behaved properly. On approaching Enfield I found the distant and home signals off, the latter for the front platform, the one we always arrive at with this train, which was the same length as usual. I had shut off steam close to the signal-box, the speed then not exceeding 15 or 16 miles an hour, about the same as usual. I first applied the air-brake when the engine was half way along the platform, the speed being about 10 miles an hour. The gauge was showing about 75 lbs., and I may have used about 10 or 15 lbs. for this first application. The speed was reduced properly by this application. I then gave a second one some 30 yards further on, the speed being reduced to four or five miles an hour. It required a third application of the brake to stop the engine at about 15 yards from the buffer-stops, and on applying it for the third time the wheels picked up and slid along the rails till we struck the stops at about four miles an hour. There was no time to apply sand, which there was on the engine. The fireman did not apply his hand-brake. He was busy about the injector at the time. We are supposed to enter terminal stations at such speed that the hand-brake can stop the train, and I think the train could have been stopped with the hand-brake only when I first applied the Westinghouse brake. Under similar circumstances I would not depend again upon the air-brake, but would have the hand-brake applied at the end of the platform. I may have used too much air in applying the brake the third time, and thus caused the wheels to skid. It had begun to rain between Bush Hill Park and Enfield. Neither I nor the fireman jumped off. There was no damage either to the engine or train. I did not feel the guard's brake applied.

6. *Frederic Moore*, fireman; 6¼ years' service, 2¼ years fireman.—I have been Randall's fireman about 12 months, and I was with him on the 17th October, my hours being the same as his. I agree with his evidence, except that I think the speed may have been 20 miles when steam was shut off, and that I think he failed to apply the brake for the third time till it was too late. I was putting on the injector from the time of passing the signal-box up to that of the collision, and I had not applied my hand-brake as I ought to have done, and have looked after the sand, of which there was a supply on the engine.

Conclusion.

This collision with buffer-stops was due to the usual cause of these collisions, viz., to non-observance of the rule enjoining drivers to enter terminal stations at hand-brake speed, and to dependence on the continuous brake for stopping their train, but applying it too near the buffer-stops to allow of this being done in time to prevent a collision.

In the present case, Randall, a driver of 23 years' service as such, well accustomed to working trains on the Enfield branch, assisted by a fireman who had been with him a year, and driving an engine of which he had been in charge for about 18 months, states that he passed the Enfield signal-cabin (330 yards from the buffer-stops), just after shutting off steam, at a speed of 15 or 16 miles an hour, that he first applied the Westinghouse brake when the engine was about half way along the platform (about 100 yards from the buffer-stops), when the speed had become reduced to about 10 miles an hour, by which application the speed was still further reduced; that he made a second application of the brake about 30 yards further on, thus reducing the speed to four or five miles an hour; and then a third to stop the train at the usual

place, *i.e.* with the engine about 15 yards from the buffer-stops; that this third application of the brake produced no effect, the wheels having "picked up," and slid along the rails with the result that the buffer-stops were struck at a speed of about four miles an hour. Randall says that he had no time to apply sand after finding that the wheels were skidding, and that his fireman was engaged with the injector. He also states that he thinks he may have used too much air on the third application of the brake; that the train could have been stopped with the hand-brake alone when he first applied the Westinghouse brake, and that in future he would not depend upon the continuous brake, but would use the hand-brake only.

Randall must be held to be principally to blame for the occurrence of this collision, as he failed, not only to stop his train at the usual place, about 15 yards from the buffer-stops, but allowed his engine to strike those stops at a speed of about four miles an hour, and this although his train was amply equipped with brake power.

Randall's booked hours of work were 10, and he had been on duty nearly seven hours when the collision occurred.

Moore, Randall's fireman, is to be blamed for having been engaged about the injector when his train was entering the station and approaching the buffer-stops, instead of attending to the hand-brake and to the sand valves, as he ought to have done. Had the sand valves been opened before the third application of the brake it is very possible the collision might have been prevented.

Moore's hours of duty were the same as Randall's.

Roberts, the guard of the train, riding in the brake-compartment of the rear vehicle, thought that the speed was 25 miles an hour or rather less (somewhat faster than usual) on passing the signal-cabin, his hand-brake having been applied before reaching it, and having never been afterwards released; that speed was reduced at the end of the platform to 12 or 13 miles an hour by an application of the Westinghouse brake, which was then released, but that the speed continued to fall owing to his hand-brake being still applied, and that he had no fear of anything going wrong till, finding the rear vehicle was not stopping at the usual place, he made for the Westinghouse brake-tap, but was not in time to turn it before the engine struck the buffer-stops at a speed of four or five miles an hour. Roberts was not knocked down or hurt. His booked hours of duty were nearly eight, and had expired upon the arrival of this train at Enfield.

The above statements as to the speed of the train when running along the platform are to a great extent borne out by those of the foreman porter and a porter guard, who were standing on the platform, the former about 45 yards and the latter about 100 yards from the buffer-stops. The foreman porter states that the engine passed him at a speed of five or six miles an hour, and he thought that it would stop at the usual place, about 30 yards further on. The porter guard thinks the speed of the engine was about five miles an hour (evidently underestimated) when it passed him, and that he jumped on to the rear vehicle to change the lamp, as it passed him almost stopped, when the train seemed to shoot ahead and strike the buffers. The blow did not knock him off the back of the rear vehicle.

This occurrence of another collision under the rule for entering terminal stations at hand-brake speed, this rule not forbidding the ordinary use of the continuous brake, may, it is hoped, lead to a reconsideration of the rule, and to the adoption of one allowing the use of the hand-brakes only, unless in the case of emergency. The rule as it stands is a constant temptation to drivers to run in at improper speed, and hence from want of judgment, or under unfavourable conditions, to be unable to stop in time to avoid collision with buffer-stops.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) C. S. Hutchinson,
Major-General, R.E.

Printed copies of the above Report were sent to the Company on the 8th December.

GREAT NORTHERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
2nd December 1893.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 27th ultimo, the result

of my enquiry into the circumstances attending a collision which took place on the 15th ultimo, at Ramsey terminal station, on the Great Northern Railway.

In this case a light engine and tender, running tender first, returning from Holme to be attached to the 5.55 p.m. up train from Ramsey to Holme, entered Ramsey station at too high a speed and came into collision at 6.1 p.m. with the four carriages comprising the 5.55 p.m. train, which carriages were already loaded and were standing at the platform.

The carriages were driven back for 10 or 12 yards, but none of them left the rails.

Ten out of the total number of 16 passengers are stated to have complained of injury, and the brakesman on the engine was also slightly injured.

The engine and tender were not damaged, but the dome lights of three brake-carriages in the train, and the buffer-beam and castings of the brake-carriage struck by the tender, were broken.

Description.

Ramsey station is the terminus of a single line 5 miles 58½ chains in length, running from west to east, and it has one platform. The line is dead level except at one point, about half-way between Holme and Ramsey, where it passes over a fen drain.

Approaching the station there are three facing-point connections leading to the engine-shed, goods yard and sidings, and the outermost set of points is 228 yards west of the point of collision, which was about five yards east of the outer end of the platform. A level-crossing, referred to in the evidence, is 250 yards west of the point of collision, and the centre of the engine-shed is 103 yards west of this point.

The down home-signal and the up starting-signal are on one post at the west end of the platform, very near to the point of collision, and the only other signal is the down distant-signal, 543 yards west of the home-signal.

The facing-points lie normally for the passenger line, and are padlocked, but all the points are worked by ground levers, and the points and signals are not interlocked.

The line is worked by one engine in steam carrying a staff.

Evidence.

James Sutton states: I have been nearly 19 years in the service, and a driver for four years. I have frequently driven on the Ramsey branch during the last three years, and had often been on it before that as a fireman. I know the branch thoroughly. On the 15th November, I came on duty at 12.25 p.m. to work till shortly after 10 p.m. There are two sets of men working the branch. One set come on at 4.50 a.m. and go off at about 1 p.m., and the others have the afternoon shift. They change duty weekly. My engine, No. 340, was a six-wheels coupled tender engine. We ran tender first from Holme to Ramsey. On the 15th November I had worked first the 1.14 p.m. train from Holme, and after that I worked all the trains throughout the day. I brought the 4.30 p.m. train from Holme, arriving at Ramsey at 4.44. My next trip was with an up goods train leaving Ramsey at 4.50, and due to arrive at Holme at 5.27. I started all right at 4.50, but had a good deal of shunting to do at St. Mary's, and so did not arrive at Holme till 5.40. I had to put the train into a siding, and started back at 5.49. I was due to take an up passenger train from Ramsey at 5.55, and I went back light with my tender in front. I went at my usual speed. The signals at St. Mary's were off for me. The distant-signal at Ramsey was at danger. I saw it about a quarter of a mile off. I was then running close upon 30 miles an hour. I shut off steam just outside the distant-signal, and came past the signal at a speed of over 20 miles an hour. I applied my vacuum brake slightly twice, between the distant-signal and the road-crossing. I must have been running at about 15 miles an hour at the crossing, and then I applied my brake sharply. When I got to the engine-shed I found that the speed was not decreasing to my satisfaction, so I applied my brake full power. I afterwards reversed my engine, and applied steam, but I did not stop before coming into collision with the carriages composing the 5.55 train, which were standing at the platform. I think my speed was then about four miles an hour. I remained on my engine. I was not knocked down or hurt. I knew the train was there, and that I ought to have come steadily on to it. The home-signal which I had seen when between the distant-signal and the crossing was at danger. All the six wheels of my engine, and the six wheels of the tender, were braked. My automatic vacuum brake-gauge showed a vacuum of 20 inches. I cannot remember exactly how many inches I reduced it to when I applied the brake at the crossing. I reduced it to zero at the engine-shed. I did not think it necessary to apply the brake fuller at the crossing. I think my speed was about 12 miles an hour at the shed. There had been a light drizzling shower which came on as I was running from Holme, and that made the rails very greasy. I thought I had made due allowance for this, but I suppose I did not allow quite enough. I was quite confident I was going to stop, but was deceived. My brake was in good order. My fireman put on the tender-brake by hand as well. My tender wheels, or some of them, were skidding. My fireman opened the sand-valves soon after passing the crossing. This would apply sand in front of the two proper leading wheels of the engine only. My engine was not damaged and nothing left the rails. There were four carriages in the train. I took the time and we arrived at 6.1 p.m. My brakesman was on the engine with us. Just after I had applied the brake sharply at the crossing he called out to me "Steady, Jim!" I did not sound my whistle, being fully engaged.

William Brown states: I have been about 15 or 16 years in the service, and a fireman for about 12 years. I am well acquainted with the Ramsey branch. On the 15th November I was working as fireman with driver Sutton. I have heard my driver's statement read over, and, so far as I know, it is correct,

except that I did not apply the hand-brake at all, and we were between the crossing and the shed when I opened the sand-valves. I cannot, however, state exactly where my driver applied the brakes, as I was attending to the injector and other matters. I did not feel at all alarmed at the speed we were running at, and thought we would stop all right. I was knocked over by the collision but was not hurt.

Charles Edward Robinson states: I have been two years seven months in the service, and 13 months a brakesman. I have all the time been working on the Ramsey branch. On the 15th November I came on duty at 12.25, to work till about 11.10. There are two of us to work the branch, one taking the early shift from 4.50 a.m. to 2 p.m., and the other one from 12.25 to 11.10. We change duty every week. On the 15th, after bringing the 4.30 p.m. train from Holme to Ramsey, we took a goods train to Holme, and came back light. We were rather late in getting to Holme owing to shunting at St. Mary's, and we did not leave Holme on the return journey until 5.49, that is 12 minutes late. I do not think our speed on the return journey was much above the average. We are allowed 13 minutes for that trip with the light engine, and we took 12 minutes. We passed the distant-signal at "Danger," having reduced speed, and my driver applied his brake twice before reaching the crossing. When we reached the crossing I began to think our speed was too high, being 10 or 12 miles an hour, and I said to my driver, "Hold her up, Jimmy!" and told the fireman to look to his brake. My driver had applied his brake at the crossing, but I thought not quite enough. He then applied the brake full power, and reversed his engine. I cannot say exactly where the brake was applied at full power. I think the speed at the time the collision occurred was about four miles an hour. I was thrown against the tender end, and slightly bruised my shoulder. My hand-lamp was broken. The collision took place at 6.1 p.m. The train was due out at 5.55. The train consisted of one third-class brake-carriage, one composite brake-carriage, one composite, and one third-class brake-carriage. The dome lights of all the brake-carriages were broken, and the buffer-beam and castings of the carriage, which was first struck, were broken. The train was driven back for about one carriage length, the brakes being on. Four or five passengers complained of injury. There was a drizzling rain at the time, and the rails were greasy. I do not know how many passengers were in the train. I think my watch was right, but I did not compare it with the clock at Ramsey. I am sure that we took 12 minutes in running from Holme to Ramsey.

George Vincent states: I have been 27 years in the service, and have been stationmaster at Ramsey for four years. On the 15th November I was on duty when the collision occurred. The carriages composing the 5.55 p.m. train were standing at the platform, ready to go out when the engine put back from Holme. There were 16 passengers in the carriages. I saw the engine approaching. It seemed to me to be coming past the engine-shed rather faster than usual. I was not, however, alarmed, as I thought the driver would stop easily. I did not think it necessary to try to get the passengers out, even if there had been time to do so. I heard no whistling. I estimate the speed of the engine when it struck the train at about four miles an hour. The train was driven back about the length of a coach. I received complaints of injury from five passengers. There were no serious injuries that I saw. Driver Sutton is a steady man. I asked him how he could account for the accident, and he told me he miscalculated his speed a little. The points at the west end of the station lie for the platform line, and are padlocked. All the points are worked from the ground, and there is no interlocking between the points and signals. The line is worked with one engine only, carrying a staff. I booked the time of the collision at 6 p.m., but the guard booked it at 6.1 p.m. There may have been a little difference between his watch and the station clock. It was drizzling at the time. The rails were very greasy.

Conclusion.

This collision was caused by the failure of driver James Sutton to get his engine under proper control when approaching Ramsey station on his return journey from Holme at about 6 p.m. He had brought the 4.30 p.m. train from Holme to Ramsey, and had then, at 4.50 p.m., taken a goods train back to Holme, but, owing to the time spent in shunting at the intermediate station, St. Mary's, he was 13 minutes late in arriving at Holme, and 12 minutes late in starting back at 5.49 p.m. with his light engine and tender.

He was due at Ramsey to take out an up passenger train at 5.55 p.m., and, although he stated that he ran back at his usual speed, it appears that the time taken to run the distance of 5 miles 58 chains was 12 minutes instead of 13 minutes, the time allowed for doing so. I think, therefore, that he must have been hurrying back, the proper time for the starting of the passenger train being already past, and that, owing to a miscalculation of his speed and to his not making sufficient allowance for the greasy condition of the rails, he allowed his engine to run too far before making full use of his powerful brake, acting upon all the wheels of his engine and tender, so that he overran the home-signal and came into collision, at a speed of about four miles an hour, with the loaded carriages composing the train, which he should have approached quite slowly in order that his engine might be coupled on to them.

Driver Sutton had at the time been on duty for a little over 5½ hours.

I must observe that it appears to be the practice to work this short branch with a tender-engine, which is not turned, and runs tender first on the journey from Holme to Ramsey. It is much to be desired that, on branches where there are no facilities for turning engines, properly constructed tank-engines should be used for working passenger trains, for the running of engines tender first involves a certain amount of risk, and exposes the drivers and firemen to great discomfort in bad weather. It is more than possible that if the engine in this case had been running in front of the tender, or if it had been a tank-engine, the accident would not have occurred, for in either of these

cases the sand applied to the rails would have affected all the wheels, instead of only two pair of the engine wheels.

This branch line is owned by the Great Eastern Railway Company, but is leased to the Great Northern Railway Company, and, under the order in accordance with the Regulation of Railways Act, 1889, issued to the owning Company on the 20th November 1890, it would appear that the points and signals at Ramsey station ought to have been interlocked before the 20th November 1892, the date at which the order in question, so far as regards interlocking, came into operation.

It is desirable that the Great Eastern Railway Company should be called upon to cause the necessary work to be carried out at once by whichever Company may, by the terms of the lease, be responsible for the cost thereof.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) F. A. Marindin,
Major, R.E.

Printed copies of the above Report were sent to the Great Northern and Great Eastern Railway Companies on the 1st January 1894.

GREAT NORTHERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
24th January 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 29th December 1893, the result of my enquiry into the collision that occurred on the 23rd idem at King's Cross station on the Great Northern Railway, between the 1.5 p.m. train from London to Hatfield, and some empty carriages (forming a portion of the 1.30 p.m. express train to the North) which had been shunted into the tunnel outside the station.

Nine passengers in the 1.5 train are reported to have complained of being shaken, and guard Cobb who was in the van attached to the empty carriages was bruised about the arms and shoulder.

The train consisted of a four-wheels-coupled express passenger engine, tender, and 10 vehicles, all of which were fitted with the automatic vacuum brake.

The vacuum-pipe in front of the engine was broken by the collision, thereby causing the immediate automatic application of the brake throughout the train. No damage was done to the vehicles of the train.

There were seven empty coaches in the tunnel attached to a four-wheels-coupled express passenger engine and tender (the latter being in front), all fitted with the automatic vacuum-brake appliances, but the brake was not connected up, as the engine was merely engaged in shunting. It was fortunate that the wheels of the carriages were unbraked at the time of the collision, as the shock was doubtless thereby reduced.

The two last vehicles were badly, and the remaining vehicles slightly damaged. For details *see* Appendix.

The only injury to the permanent-way consisted of two chairs broken.

Description.

This collision occurred on the down main line, 84 yards inside the gasworks tunnel, the mouth of which is situated 150 yards from the extremity of the down departure platform. There are two lines of rails through this tunnel, one of these being known as the shunt line, and used for shunting purposes only, the other being the down main line. Parallel to this tunnel and close to it on the west side is another tunnel, which accommodates the down slow and down goods lines. About 90 yards from the tunnel's mouth these four lines pass under the Congreve Street bridge, (also known as the gasworks bridge,) and at this spot there are two sets of points on the down main line leading from the down local departure platform lines, and from No. 1 carriage siding respectively. It was here that the empty carriages left the road, and caused the obstruction that led up to the subsequent collision. Although these points are trailing for trains travelling in the proper direction, they are provided with locking bolts and bars for use when engines or carriages are being set back through them in the facing direction.

Alongside of the down main line inside the station there are four lines used as carriage sidings, and it was on No. 1 siding, *i.e.*, the one nearest the main line, that the mail-van was standing, which, as shown by the evidence, had to be attached to the end of the front portion of the 1.30 train. There is a cross-over road between No. 1 siding and the main line underneath the northern extremity of the roof of the station, or about 60 yards from the extreme end of the platform, which extends this distance outside the roof.

There are, among others, connections between the down local lines and the down main, between the down local lines and the down slow, between the down slow and the down main, and between all these lines and the shunt line. The signalling is necessarily of a somewhat complex nature, but there is no need to describe it (which in fact would be difficult without the aid of a diagram) as no question concerning the interlocking arises in connection with this collision.

The signal-cabin is an eight-hour box manned by two men at a time, and is situated south of and close to the Congreve Street bridge; a good view of the lines up to the tunnel's mouth is obtained from it.

Evidence.

Thomas Haddaway, foreman-shunter, states: I have been in the Company's service 16 years, and foreman-shunter about 11 years. I came on duty at 4 o'clock on Saturday morning last, December 23rd, to take charge of the shunting in the yard of the King's Cross passenger station. I came off duty at 2 p.m. on 22nd December. My work was confined to the yard. I had not charge of the trains at the tunnel mouth. Foreman Daniels had charge there. At 12.50 we had both portions of the 1.30 p.m. down express back at the main line platform. We required to attach the mail-van in front of the rear brake of the first portion. The mail-van stood in the No. 1 siding next to the main line departure platform, just under the north end of the Arcade. An engine was attached to the van. We had by special arrangement placed this mail-van at the south end of No. 5 arrival platform for the convenience of the Post Office, and this prevented us from putting the van into the train in the first instance, the train having been made up at Holloway. We had therefore to draw the front portion, consisting of 11 vehicles, of the first part of the 1.30 p.m. down express down towards the tunnel mouth on the main line in order to admit of the mail-van being put into its proper position on the train. After this had been done the driver with the front portion of the train was called back. There were only 11 carriages on the engine. The driver came back very steadily. Before the driver commenced to set back, the train of empty coaches stood with the two rearmost vehicles just south of the north end of No. 1 main line points. The points had been set in proper position for the train to draw out and, so far as I know, had not been altered again. I did not see the points myself as I was engaged in attaching the mail-van. There was no necessity to move the points, and so far as I know they were not moved. I noticed the coaches coming back and saw that some of the carriages were off the road. I therefore shouted, and the driver was stopped. We found that the two rearmost vehicles were all right, but that the third and fourth were off the road. Of the third vehicle the rear wheels (in the direction of setting back) were off the road. Of the fourth vehicle all the wheels were off. Both of these were six-wheeled coaches. I did not look at the points as I went off at once to get some men together, but I did call out to the signalman, and he told me that the points were all right in the frame. We pushed the two rearmost vehicles which were all right away from the two which were off the road, and we then detached the seven carriages which were in front of the two which were off the road, and sent them forward into the tunnel on to the down fast line. I cannot say who was in charge of this part of the work. We were all as busy as we could be and were all working hard to clear the line. I do not know whether the signalmen had been told that the carriages had been sent in the tunnel. I did not tell them. I knew that there was a man stationed at the tunnel mouth to protect trains going into the tunnel. I did not call him from this work, and did not know that he was not at his post. I was busy getting an engine to the north end of the carriages which were off the road when I heard the collision in the tunnel. I did not know up to that time that any train had left the local station on the fast line. I did not notice the 1.5 p.m. train leaving. There were three or four passengers in the two rearmost vehicles and the two carriages which were off the road, but there were none so far as I know in the carriages sent into the tunnel. I cannot in the least account for the carriages leaving the road. We have never had trouble with these points, they have always worked well both before and since the accident. The points are now in the same state as they were at the time of the accident. They were used continuously on the day of the collision, as soon as the coaches were replaced on the rails.

Foreman-shunter *James Daniels* states: I have been in the service of the Great Northern Company about 22 years, and foreman-shunter at King's Cross about 16 years. On Saturday last, 23rd December, I was in charge at the tunnel mouth. I came on duty at 6 a.m., having come off duty at 3 p.m. on the 22nd December. Everything had worked very comfortably indeed up to the time that the carriages left the road. About 12.55 we drew down the main line towards the tunnel mouth, the front portion of the first part of the 1.30 p.m. down express from King's Cross to attach the mail-van. The engine came to a stand at about the tunnel mouth. In setting back the coaches of the front portion, after the mail-van had been attached, the third and fourth carriages at the rear came off the road at the No. 1 main line points. The points did not require to be moved by the signalman, their normal position lay right for the work. I have no reason to think that the points were moved, and do not see how it is possible that the signalman could have moved them as the train of empty coaches was upon them at the time it came to a stand when first drawn down. The engine stood this side of the tunnel mouth, and the two rear-most carriages were south of the No. 1 main line points. There were in all 11 carriages on the engine. The driver set back very steadily. I am quite unable to account for the carriages leaving the road. We have never had any trouble with these points. We have never, that I am aware of, had anything off at them before. Foreman Haddaway uncoupled the empty coaches which stood north of the two that were off the road, and sent them down into the tunnel on the fast line, and I

arranged with the signalman for an engine to be sent down into the shunt line and then backed to the carriages which were off the road in order to help to get them on again. At the same time the two rearmost carriages which were all right were detached and pushed back out of the way. We were doing this at the time the 1.5 p.m. train from King's Cross was started, and came into collision with the empty coaches that Haddaway had sent into the tunnel on the fast line. We were all most anxious to get on again the two carriages that were off the road. I do not know whether the signalman had been told that the carriages had been sent into the tunnel on the fast line. There was a flagman at the tunnel-mouth with instructions to protect the tunnel working, but I believe he was withdrawn by foreman Washtell in order to help to bring the ramps to the carriages which were off the road, and that he was not there when the 1.5 left the station. The points have not been altered, so far as I know, since the accident occurred.

Arthur Washtell, foreman-shunter, states: I have been in the service of the Company 21 years, and foreman-shunter at King's Cross about 17 years. On Saturday, 23rd December, I came on duty at 12 noon, having come off the day before at 12 midnight, because it was the Saturday before Christmas. My ordinary time being 3 o'clock. I was assisting generally in the yard. I was not taking any part in the formation of the 1.30 p.m. train from King's Cross. My attention was called to the two carriages being off the road near the west box. I went there at once. As soon as I saw the carriages were off the road I ran for the ramps which are kept underneath the Battle Bridge. There were two or three men standing between the gasworks bridge and the tunnel mouth, and I called to them to help with the ramps. The flagman at the tunnel mouth was standing with the two other men. I did not specially call the flagman to help. I called out generally for assistance. One of the men helped me with one ramp and the other men brought the other. I am not sure whether the flagman was one of the other men or not. I was very anxious to get the carriages on the road because I knew the effect their being off the road would have on the working. I knew nothing of the starting of the 1.5 p.m. train from the local station. I was at work on the two carriages that were off the road when the collision took place in the tunnel. I do not know who detached the seven coaches in front of the two that were off the road, or who sent the driver down into the tunnel.

William Larrett, porter, states: I have been in the Company's service about eight months, all the time at King's Cross. On Saturday last, 23rd December, I came on duty at 11 a.m. having left off duty the day before at 12 mid-day. I received instructions from foreman Daniels to go down to the tunnel mouth with a red flag from 12 to 3 p.m., and in case of shunts sent into the tunnel on the fast line not to allow anything else to enter the tunnel on that line until the shunt had been brought back. I had done this duty once before about a month ago. I quite understood what was wanted. I commenced the duty about 12 noon. There was nothing sent into the tunnel on the down fast line until the front portion of the 1.30 drew down. The engine of this train drew inside the tunnel. I assisted to call the driver back when the foreman signalled that he was to come back. I saw foreman Daniels and foreman Washtell give the driver a hand-signal to set back on to the 1.30 train. After seeing them do this, I waved the driver back too. The driver set back very steadily indeed. I did not see the carriages leave the road, but heard foreman Daniels and foreman Washtell shout, and saw them hold up their hands, and I then showed my red flag to the driver. He stopped very quickly. I then saw that there were two carriages off the road. Foreman Washtell then called to me to help with the ramps. There were two other men near me at the time, one, I think, a platelayer, and the other a shunter, and we all three went with foreman Washtell. Foreman Washtell took one ramp, and the platelayer the other, and the other man and I helped to lift the ramps on their backs. I came up with the ramps to the carriages that were off the road. After we had got the ramps to the carriages I came back to the tunnel mouth. In the meantime the carriages had been sent into the tunnel, and the 1.5 had been allowed to enter it behind them. When I left the tunnel mouth there were no carriages there. I think I may have been away from the tunnel mouth a matter of 10 minutes. I left because foreman Washtell asked me to go. He did not mention me by name, but called to all of us to come and help with the ramps.

John Lewin, signalman, states: I have been in the Company's service 27 years, and signalman 25 years. I have been at the King's Cross west box upwards of 12 years. It is a special first-class box. The duty is eight hours and we have the assistance of an eight hours signalman. On Saturday last, 23rd December, I came on duty at 6 a.m. Everything worked very well indeed, and I think we got everything away to right time up to a few minutes before 1 o'clock. At that time the two portions of the 1.30 out were back at the main line down platform, and it was necessary to draw the front portion of the first part down in the direction of the tunnel mouth in order to put in the mail-van which stood in the next road. I gave 84 disc to allow the engine and coaches to draw down on main line as far as No. 86 signal. I then replaced 84 disc and gave the driver No. 86 signal to take him down to the tunnel. Foreman Haddaway told me what he wanted to do. No. 1 main line points were in their normal position and the train stood upon them; the two rearmost vehicles stood, I think, on the south side of the points. After the mail-van had been transferred to its proper position the shunters called the front portion back. The points remained in their normal position just as they were when the train drew down. I did not touch them at all, and I feel pretty certain that my mate did not do so either. I am absolutely certain that at the time the coaches set back the lever No. 106 in my frame was in its normal position. I was not watching the setting back of the coaches, but I heard that they were off the road, and looking round saw that it was so. I went to my book to book out the 12.51 and 12.55 local trains which had gone previously, and which I had not had the opportunity of entering. After I had made the requisite entries in connection with these trains I noted in my book the fact of the coaches being off the road. This was at 1.2 p.m. I went to my instrument with the intention of sending the 1.5 p.m. train from the local station on the slow road. I believed at that time that the coaches, which were in front of those off the road, were blocking the down fast line, but when I looked I saw that the down fast line was quite clear. I said to signalman Manktelow, "What! "Are they clear Jim?" and he said, "Yes." I then walked to the window, called out to foreman Coombes, and asked him whether the coaches which were off the road were quite clear of the local line, and he said "Yes." I thereupon signalled the train forward upon the fast road and pulled off my signals after setting the points for the 1.5 p.m. train to leave the local siding. I saw the train start and watched it enter the tunnel. The driver was running very cautiously because of the two coaches being off the road. I heard the noise of the collision and noticed the train come to a stand. The whole of the train did not, I think, enter the tunnel; probably the two rearmost vehicles were this side of the tunnel. My impression, when I saw the down fast line clear, was that the carriages in front of the two that were off the road, had been sent into the shunt line. I did not know how many there were or I might have been aware that this was not possible, and that the car-

riages must be on the fast line. I am quite certain that my attention was never called by the shunters to the fact of the coaches having been sent into the tunnel on the down fast line. I knew that there had been a man with a red flag stationed at the mouth of the tunnel from 12 noon. I did not see whether this man was at the tunnel mouth when the 1.5 p.m. train from King's Cross entered the tunnel or not, but I saw him about five or ten minutes afterwards walking towards the tunnel from the direction of the yard.

James David Manktelow, signalman, states: I have been in the Company's service 15 years and 10 years signalman. I have been stationed at the west box, King's Cross, since the 1st May last. I am a first-class signalman. On Saturday, last 23rd December, everything worked very well up to about 1 p.m. The traffic was exceptionally heavy, and for a Saturday previous to a bank-holiday the working had been exceedingly good. About 12.59 the shunters called out that they wanted to draw down off the main line with the first part of the 1.30 p.m. train from King's Cross. I think foreman Daniels called out. It was not necessary to alter the points at all; their normal position was right for that operation. The train was drawn down towards the tunnel mouth. As soon as this had been done we were asked to unlock the bolt-lock in order that the shunters might put a vehicle on to the main line departure road. We assumed that this vehicle was to form part of the 1.30. The carriage having been transferred the bolt-lock was closed again, and the carriages, which had drawn down towards the tunnel, were set back by the shunters to be connected to the rear portion of the train which stood at the platform. When the train was setting back, I noticed the third and fourth coaches leave the road. The levers of the points were at that time, and had been for some time, in their normal position. I was at the time in the act of putting back the bolt-lock levers. We did our best to call the attention of the driver, and succeeded, and the train pulled up with only two carriages off the road. The driver obeyed the signals very promptly. I did not notice how many carriages there were in front of the two that were off the road. The shunters were very anxious to get an engine to the north-end of the vehicles off the road. I did not notice that the first coaches were detached and sent into the tunnel on the fast line. I was not informed in any way that this had been done, and it did not occur to me that it had been done. I knew that it was most important to get these coaches on the line again, and was working to get an engine on to the north-end of them. I think all the shunters were on the spot and four or five foreman. I heard signalman Lewin ask one of the foreman, Coombes, I believe, whether the road was clear for the train from No. 1 siding, and Lewin at the same time said to me, "Are they clear under the bridge?" I looked and everything was clear right to the tunnel mouth, and I told Lewin so. Lewin thereupon pulled off his signal for the train to leave. It was drawn very cautiously past the coaches which were off the road. It drew into the tunnel at speed not exceeding, in my opinion, four or five miles an hour. We heard a noise in the tunnel and I remarked to Lewin that they were off the road; it did not then occur to me that there were any coaches on the fast line. I am anxious to be perfectly just, and I desire to say that signalman Lewin's working was entirely right, and that he was exercising great care. If there is any fault attached to the signalman's working, it attaches to me and not to Lewin. I cannot in the least account for the coaches leaving the road in the first instance. The points in question have always worked well. Nothing has been done to them since the accident. Their working directly after the accident was perfect. I examined them very carefully but could not detect a mark upon them.

James Carter, driver, states: I have been in the service of the Great Northern Railway 30 years, and have been passed driver 20 years. I am stationed at Cambridge. On Saturday last, 23rd December, I commenced duty at Cambridge at 9 a.m., and worked up the 10 a.m. train from Cambridge to King's Cross, due at King's Cross at 11.20 a.m. I had next to take out the 1.5 p.m. train from King's Cross to Hatfield. I was on that train and ready to start at 12.50 p.m. I noticed the starting-signal pulled off at about 1.7 p.m., and just afterwards the guards gave me the word to start. I knew that there were carriages off the road in the yard. I saw that the carriages were clear of the road on which I was running. There were a good many men at work at the carriages that were off the road, and I drew out very cautiously. The signals were all off for me up to and including those at the tunnel mouth. In my opinion the speed of my train on entering the tunnel was not in excess of from six to eight miles an hour. I did not notice that there were carrriages in front until we struck them. The collision broke the vacuum brake-pipe in front of my engine, and the brake went on at once and held the train. The buffers of my engine were driven through the carriages which we struck. The collision was a very "easy" one. There was not the slightest rebound, because we were moving slowly and the brake went on at once. I was not hurt in the least neither was my mate. As we passed into the tunnel I saw no flagman. So far as I know there was no damage done to my train, and the damage to the engine was confined to the buffers and the vacuum-pipe. My engine is a four-wheeled coupled express passenger engine, and it was fitted with the automatic vacuum-brake, and the train was fitted throughout with the same brake.

Alfred Crosby, engine-driver, states: I have been in the service of the Great Northern Company 33 years, and passed driver 21 years. On 23rd December I signed on at 12.40 a.m., having signed off at about 12.15 mid-day on 22nd December. I had backed to the departure platform a few minutes before 1 o'clock the two portions forming the 1.30 p.m. train from King's Cross. I was then instructed to draw down the greater portion of the first part in order that the mail-van might be put in at the rear. I drew down towards the tunnel mouth, and came to a stand with my engine just inside the tunnel. After having stood there two or three minutes I was called back by the flagman. We set back slowly, and had got back about two carriage lengths, when I saw a carriage jump off the road. I was watching the carriages as we were setting back. I brought the train to a stand as soon as possible. I remained on my engine and did not go to the carriages. In less than a minute the carriages which remained on the road were unhooked from those that were off the road. Someone called out to me, I am not sure who it was, but I think it was foreman Haddaway, to draw over the points. What he said was, "Draw up over the points, that we can get an engine on." I gathered that this meant to get an engine at the north end of the carriages which were off the road to pull them on. I therefore drew into the tunnel with the carriages, and stopped about two carriage lengths over the points. I thought he would require to bring the engine from the shunt road into the main line through the points in the tunnel, and therefore I drew down clear of those points. We had not been standing there more than two minutes when I felt that we were run into from behind. The brake was still on the engine at the time. There was no brake on the carriages at the time, but the brake was on the engine. We were pushed forward perhaps 12 or 15 yards. My engine was a four wheels coupled express passenger engine, with six-wheeled tender. It was fitted with the automatic vacuum-brake. The brake was not connected throughout the train. I was driven forward about an engine length. I noticed nothing

unusual when I started to set back. I had set back about two carriage lengths when I came to a stand.

William Barker, fireman, states: I have been in the Company's service 12 years, and have been 9 years fireman on the 23rd December. My hours of duty were the same as my driver's. I was firing for driver Crosby on Saturday December 23rd. When the two carriages left the road, I got off my engine and went to them. I heard inspector White give the order to unhook the carriages that were in front of the two that were off the road, and send them into the tunnel, and directly afterwards I heard Washtell tell someone to unhook the carriages and then call out to the driver to draw down into the tunnel. I then ran to the engine and went with it into the tunnel. We had not been standing there more than two minutes when the collision took place. I was not hurt; in fact, we did not feel the collision at all. The engine was running tender first.

Frederick William Ricketts, passenger guard, states: I have been in the service of the Great Northern Railway Company 11 years, and passenger guard 4 years. I was working with the 1.5 p.m. train from King's Cross on Saturday 23rd inst. I rode in the front van. We started from No. 1 local siding. I saw the starting-signal pulled off about 1.5½, and told inspector Bellingham who was on duty on the platform that the signal was off. Almost directly afterwards the inspector gave us the signal to start, and I gave a signal to my driver. We actually started at 1.6 p.m. I saw that the signal at the west box was off. I did not see the signal at the tunnel-mouth. We knew that there were two carriages off the road near the west box, and we went by these very cautiously. As near as I can say the speed of the train when we entered the tunnel was six or eight miles an hour. I was not aware of any obstruction in the tunnel until we struck some carriages that were standing there. I was standing upon my van at the time arranging my luggage, some of which had been placed on the top of milk churns. I felt the collision very slightly. I was not thrown down. Our train consisted of 11 carriages well filled with passengers. My hand-lamp was knocked off the shelf. I picked it up, relighted it, and got out immediately. I went back to the rear of my train telling passengers to keep their seats, and found that the three rearmost vehicles were outside the tunnel. I do not think any damage was done to my train. I had no complaint made to me by any passenger. No case of personal injury was brought under my notice at the time. The engine and train throughout were fitted with the continuous vacuum-brake which was in good order. I felt the brake go on directly the collision took place. I did not feel any rebound of the train.

Inspector *White* states: I was near the coaches at the time they left the road. After looking at the block it was agreed to send the engine and seven coaches in front of the two that were off the road into the tunnel in order that an engine might be got on the fast line at the north end of the carriages that were off the road. An engine had been got round to this end, and the carriages were being pulled on by it, when the collision took place in the tunnel. I knew that the flagman was there with special instruction to protect the fast line. I did not know that he had been withdrawn. It was not possible to send the engine and the seven coaches into the shunt road, there not being room between the carriages which were off the road, and the shunt-road points for more than engine and one carriage. I do not know whether the signalmen were told that the engine and coaches had been sent into the tunnel. They could not be sent anywhere else. The signalmen had to work the points for the other engine to get from the shunt road to the main line, and thence to the carriages that were off the road. Under ordinary circumstances we do not put trains on the down fast line, it is only in times of exceptional pressure that we do this. It has to be done generally on Saturday from about 12.30 to 3.30, because of the number of additional trains from King's Cross. There are instructions that whenever it is necessary to use the down fast line for shunting a flagman, with red flag, must be stationed at the tunnel-mouth to protect the operations.

Foreman *Coombes* states: I have been in the service 23 years, and foreman at King's Cross about 16 years. I came on duty on Saturday, 23rd December, at 12 noon to assist with the Bank Holiday traffic. When the 1.30 p.m. train was set back to the platform I had charge of the mail-van which had to be attached in front of the rear brake of that train. I signalled to foreman Daniels and foreman Washtell who were standing near the west box to draw the train ahead so that I might transfer the mail-van from No. 1 siding, where it then stood, to the main road. I had an engine ready on the mail-van at the north end to make the transfer. The train was drawn up in accordance with my signal, and I at once transferred the mail-van to the departure road, and having done so I brought the engine back again into No. 1 siding. I then signalled again to foreman Daniels and the other men to bring the train back, and I saw the signals given to call the train back, but I cannot say by whom the signals were given. As the train came back I saw the carriages leave the road; they seemed to jump off almost as soon as the train started. The train was stopped very quickly. I went down to the place at once, and found the third and fourth carriages from the rear had left the road in setting back. There was a strong staff there of foremen and shunters, and I could do no good by stopping, and I therefore came back into No. 1 siding to find two suitable carriages to replace those off the road. I knew they would be wanted. I was not there when the carriages which were in front of those off the road were drawn into the tunnel. I can give no information as to the collision between those coaches, and the 1.5 p.m. from King's Cross. At the time the collision occurred I and my men were pushing back the two carriages which were at the south end of those which were off the road. We were pushing these back to the mail van.

Conclusion.

The following are the circumstances, as disclosed at the enquiry, which led up to this collision:—At 12.50 p.m. on the afternoon in question the vehicles comprising the two portions of the 1.30 p.m. train from King's Cross to the North were set back on to the main departure platform line. It was then necessary to attach a mail-van, which was standing in No. 1 siding next to the platform line, to the end of the front portion of this train. For this purpose the whole of the front portion of the train, with the exception of the rear brake-van, was drawn forward on the down main line a sufficient distance to clear the cross-over road between the siding on which the mail-van was standing and the main line. This portion of the train consisted of 11 vehicles besides engine and tender, and when it came to a stand the third and

fourth vehicles from the rear, having eight and six wheels respectively, were standing under the Congreve Street bridge, the two last vehicles being south, and the remaining seven vehicles and engine being north, of the bridge. There are two sets of points under this bridge, one set leading from the main line to the local lines, the other set leading to No. 1 siding, and the coaches under the bridge were necessarily standing on these points. As soon as the operation of attaching the mail-van to the rear brake-van of the 1.30 p.m. train was completed, the driver of the engine on the front portion of the train was given a hand-signal to set back up to the platform. He at once obeyed, but as soon as the train was in motion it was observed by several of the men on the spot that the third and fourth carriages from the rear of the train had left the rails, and word was at once passed to the driver to stop, which he appears to have done without delay.

Inspector White, foremen Haddaway, Washtell, Daniels, and others seem at once to have collected on the spot, and immediate steps were taken to get the two coaches back on to the rails. With this view the two carriages in rear, and the seven carriages in front, of those that were derailed were uncoupled, and it was then decided to push the two former by hand back to the platform, and to draw the latter down the main line, so as to allow an engine to be attached to the derailed carriages for the purpose of pulling them on to the line. Accordingly the driver was given instructions to draw down into the tunnel with the seven coaches attached to the engine. This he did, but no permission was obtained by him or by any one else from the two signalmen for this operation, and consequently the latter were unaware of what had been done. By this time the 1.5 p.m. local train to Hatfield was due to start, and signalman Lewin being in ignorance that the engine and seven coaches were standing on the down main line in the tunnel, set the road from the No. 1 local line to the down slow line, and thence on to the down main line, and permitted the train to leave.

Driver Carter of this train travelled cautiously along the down slow line until his train was past the carriages which had left the rails on the adjacent line, but as soon as he got on to the main line and entered the tunnel he gave his engine steam, and was travelling at about eight miles an hour, when his engine ran into the empty carriages, which were standing 84 yards inside the tunnel. The effects of the collision, which have already been described, were fortunately not very serious. The local train was at once pushed back to the platform it had just left, and the passengers allowed to alight, while arrangements were made for another train to take them forward.

It is the rule at King's Cross station when any shunting into the tunnel has to take place on the down main line, that a flagman shall be stationed at the mouth of the tunnel, with orders that when any engine or train has been shunted into the tunnel on the main line, no second engine or train is on any account to enter it on the same line. It always happens that between 12 noon and 3 p.m. on Saturdays a man is so stationed, and on the day in question porter Larrett was sent at 12 noon to the tunnel on this duty.

When the two carriages left the rails, as described, inspector Washtell, who with the others was working hard to clear away the obstruction, called out to some men who were near porter Larrett to lend a hand in fetching the ramps, which were required for use in getting the coaches on to the rails. It is not clear whether inspector Washtell intended his orders to apply to the flagman as well as the others, but porter Larrett seems to have taken them as applying to himself, and he accordingly left his post at the tunnel mouth, and accompanied Washtell and the other men in search of the ramps. The result was that when the engine and seven coaches were drawn down into the tunnel Larrett was not there to protect them, nor had he returned to his post, when the 1.5 p.m. train entered the tunnel behind the empty coaches. Driver Carter consequently received no warning of the fact that there was an obstruction in the tunnel, nor was he able to see the carriages in front of him, owing to the absence of any tail light on them and to the darkness of the tunnel.

It is clear from the above narrative that the primary cause of the collision was the derailment of the two coaches of the front portion of the 1.30 train during the shunting operations which were necessary in connection with the mail-van.

No satisfactory reason can be assigned for these coaches leaving the rails. The points were in good order at the time of my inspection of them (January 2nd, 1894), and the evidence of all concerned establishes the fact that they were then in precisely the same condition as they were on the 23rd December. No marks could be traced at the time of the mishap to throw any light on the occurrence. Both the signalmen

are positive that they made no attempt to move the points, while the vehicles were standing on them, and there was no necessity for them to do so. It can therefore only be conjectured that the splitting of the train and the consequent derailment were due in some way to the fact that the long six-wheeled coach, having a rigid wheel base of 24 ft. 2½ ins. was standing on the points at the time the engine began to set back, and caused some slight lateral movement of the switch rail.

The points in question are provided with locking-bar and bolts, and with a properly interlocked signal, but none of these could be brought into use owing to the fact that the carriages were standing on the bar and prevented it from being moved. The operation was regarded as one of shunting, and it was not considered necessary by those in charge to draw the train far enough down to clear the points and allow them to be locked by the bolt before the train set back through them in the facing direction. This would appear to have been an error on the part of those concerned, inasmuch as a few passengers had been permitted to take their seats in the rear-most vehicle, and the train was therefore a passenger train, and should not have been permitted to pass through the points in the facing direction until they had been properly bolted by the lever in the signal-cabin, and the setting-back signal lowered by the signalman.

It is fortunate that there were no passengers in the seven coaches which were in front of those that were off the road, and which were sent into the tunnel, for if this had been the case the results of the collision would have been more serious. As it was, the only person in these vehicles was a guard named Cobb, who was attending to his duties in the front van, and who was bruised about the arms and shoulder.

It is fair to the Company to state that the shunting operations described above are quite unusual. The mail-van, which had to be attached to the 1.30 train, is usually placed in its proper position when the train is marshalled at Holloway; but at the request of the officials of the General Post Office, and to facilitate the Christmas postal traffic, the van had been placed at the south end of No. 5 arrival platform for convenience of loading. It was then transferred to No. 1 siding next the main departure line ready to be attached to the 1.30 train as soon as the latter was brought alongside of the platform.

After the two coaches were derailed it was probably unavoidable that the engine and seven vehicles in front of the obstruction should be sent forward into the tunnel in order to facilitate the operations for replacing the coaches on the rails. But in carrying out this movement, it was a serious blunder, on the part of all concerned, not to have communicated with the signalman, and obtained his concurrence in the arrangements.

It is difficult to fix the responsibility for this omission on to any one in particular, for there were three foremen (Haddaway, Daniels, and Washtell) on the spot, in addition to inspector White and several other men. Doubtless they were all filled with anxiety to remove the obstruction on the line, caused by the derailed carriages, as quickly as possible, and their zeal outstripped their discretion. But inspector White appears to have been senior officer present, and he might well have taken charge of the operations, and thus avoided the confusion which was bound to arise from a want of concerted action. It therefore seems that the responsibility for the neglect of seeing that proper precautions were taken must rest with him.

Driver Crosby was, in my opinion, wrong in entering the tunnel without having received permission from the signalman or the flagman, and in passing the starting-signal at the entrance to the tunnel at danger. Had he waited till the signal was lowered for him, and if necessary sounded his whistle to intimate to the signalman what he was waiting for, the latter would have been made aware of what was going on, and would have taken the necessary steps to guard against a collision.

Crosby had been on duty at the time for 12 hours 25 minutes. I am informed that under ordinary circumstances he would have left work at 11 a.m., but that he was detained on account of the pressure of Christmas traffic. It was intended that he should be relieved at about 1.30, but in consequence of the collision he was detained till 3.30 p.m. His hours, therefore, had the collision not occurred, would have amounted to 12 hours 50 minutes, and these must be regarded as excessive. Circumstances may arise which cannot be foreseen, and which may on rare occasions render long hours unavoidable. But Christmas traffic is not unforeseen. On the contrary, arrangements are made for it weeks in advance, and it cannot be regarded as sufficient justification for keeping a driver at work for such a length of time.

A further blunder was made by the withdrawal from the mouth of the tunnel of flagman Larrett, who had been specially detailed, according to custom, by Inspector Daniels, for the purpose of protecting any engine or vehicles shunted into the tunnels on the down main line. Foreman Washtell appears to have called to a group of men near Larrett to lend a hand in fetching the "ramps," and some doubt exists whether he intended to include Larrett in the order he gave or not. It is not at all unlikely that Washtell, in his haste to assist in clearing away the obstruction, failed to make any distinction between Larrett and the other men, and ordered them all to come to his assistance. But Larrett put himself in the wrong by acting upon this order, without at any rate first reminding the foreman that he had been stationed at the tunnel for a special and important duty. Had Larrett remained at his post the collision would not have occurred, for when the empty carriages were drawn into the tunnel, it would have been his duty to have stopped any other engine or train from following, until the line was clear.

Larrett has been in the Company's service eight months, and has performed this particular duty on only one previous occasion, and it may be that his inexperience rendered him unmindful of the importance of remaining at his post until properly relieved. He had been on duty two hours and five minutes.

As regards the signalmen Lewin and Manktelow, I am unable to regard them as being responsible for the mishap. It may be argued that they ought to have known intuitively that the empty vehicles had gone forward into the tunnel, but this seems to me to be hardly fair on them. Had they been informed by some one in authority that the vehicles were in the tunnel, and had they thereafter allowed the 1.5 p.m. train to enter the tunnel on the same line, the whole fault would have been theirs. But as they were not so informed, they can hardly be blamed for having failed to rightly guess what was being done. It may be remarked that the 1.5 p.m. train might have been sent forward on the down slow line, and in fact would have been so despatched, had signalman Lewin been aware that the down main line was blocked.

The arrangements for shunting into the tunnel on the down main line hardly seem to be satisfactory. A porter (in this case an inexperienced man) placed at the tunnel's mouth with a flag, and receiving his orders from the foreman shunter, is not a sufficient protection for the traffic in a busy yard. The position is one of great responsibility, and an error on the part of the flagman might lead to disaster. If shunting into the tunnel on the main line is, as I understand, at times unavoidable, there should, in addition to the flagman, be properly interlocked shunting-signals worked from the signal-cabin, and I submit that the attention of the Company might be directed to the matter.

I have, &c.,
H. A. Yorke,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Rolling-Stock.

Great Northern engine No. 208.—Vacuum-pipe damaged.

Great Northern third 409.—Both ends broken; sides and under carriage heavily damaged.

Great Northern composite 1,931.—One end damaged badly; other end slightly damaged and under carriage damaged.

Great Northern third 2,199.—One end damaged; axle-box broken.

Great Northern thirds 490, 2,077, and 2,586 London and Brighton van 954 and first 2,409.—Slightly damaged; axle-boxes, &c., broken.

Printed copies of the above Report were sent to the Company on the 12th February 1894.

GREAT SOUTHERN AND WESTERN RAILWAY OF IRELAND.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
20th November 1893.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 23rd ultimo, the result of my enquiry into the causes of the collision which occurred on the 8th ultimo, near Roscrea station, on the Ballybrophy and Roscrea (single line) branch of the Great Southern and Western Railway of Ireland.

In this case, the 8.27 a.m. up special passenger train from Roscrea for Dublin was, while proceeding on its journey at a spot about a mile from Roscrea station, run into at the rear by an unattached tender-engine, the driver of which had, of his own accord and in contravention of rules, followed the train with the view of helping it up a rising gradient of 1 in 150, near the commencement of which the collision occurred.

Six passengers were injured, but none of them seriously.

The passenger train consisted of a six-wheeled (four wheels coupled in rear) engine (running chimney in front) six-wheeled tender, third-class brake carriage, three third-class carriages, third-class brake-carriage, three third-class carriages, third-class brake-carriage, four third-class carriages, second-class carriage, and third-class brake-carriage, 15 vehicles in all, coupled in the order stated, fitted throughout with the automatic vacuum-brake. In it, the rear six vehicles were damaged and there was a separation between the fifth and sixth vehicles from the rear of the train.

The unattached tender-engine was similar to the one drawing the passenger train, was fitted with the automatic vacuum-brake and was running chimney in front.

Description.

Roscrea station is situated at the junction of the single lines from Parsonstown and Nenagh, which lines are connected together both at the east and west ends of the station. The station is provided with two platforms, the northern being used for the Parsonstown trains and the southern for the Nenagh trains. The station has been recently resignalled, the points and signals being worked from a new cabin nearly opposite the east end of the platforms. The only signals to which it is necessary to refer are the up starting-signal nearly opposite to the cabin, and the up advanced-signal about 300 yards from the up starting-signal.

The line is level for the first half mile east of the station; it then rises on a gradient of 1 in 666 for $\frac{3}{8}$ of a mile and then again on a gradient of 1 in 150 for another half mile, and it was about $\frac{1}{8}$ of a mile up this latter gradient that the collision occurred.

From the station eastward the line curves southward for the first $\frac{1}{4}$ of a mile, and the view forward is hindered by buildings, but after this there is a long straight portion and unimpeded view eastward.

The single line working is conducted on the electric staff system, which superseded the former staff and ticket system a few months since. No. 12 of the electric staff regulations expressly forbids the practice of engines being allowed to push trains from the rear.

Evidence.

1. *Timothy Koely*, signalman; 12 years' service, 12 months signalman. I have been signalman for all 12 months at Roscrea, where I came on duty at 7.20 a.m. on the Sunday 8th October, to remain till 4 p.m. The electric staff system is in force between this and Ballybrophy, between this and Parsonstown, and between this and Cloughjordan on the Nenagh branch. An excursion train for Dublin arrived from Parsonstown for Dublin at 8.26 a.m., and the engine remained with its train till the arrival of an excursion train from Nenagh at 8.28 a.m. also for Dublin. The engine of the Nenagh train went ahead at once and stood on the main line, and then the Parsonstown train moved out and backed on to the Nenagh train. The engine of the former then returned to the Parsonstown line and at once went back to the crossing between the two lines at the west end of the station and remained there till the excursion train had started and passed the up advanced signal. The driver of the Parsonstown engine had whistled for the

crossing before the excursion train had passed the advanced signal. He whistled again and as soon as the train had passed the advanced signal and I had put that signal and also the starting-signal to danger, I opened the crossing to allow the engine to come along the Nenagh line, supposing it wanted to take water at the water column at the end of the Nenagh platform. Instead, however, of stopping at the water column the driver passed it and the starting-signal, and though I shouted and held out a red flag the driver went on and passed also the advanced signal at danger, soon after which I imagined that he must be following the train for the purpose of assisting it. The train had started with the electric staff at 8.40 a.m. and the engine three or four minutes afterwards. I have no knowledge of any previous case since the introduction of the electric staff of an engine having been sent to assist a train up the bank. I saw the driver of the Parsonstown engine when he came back and he said he wanted to give the other train a push as it was heavy. He said he had done the same thing before. I told him he had no right to have passed the signals at danger. He was to remain at the station till the excursion train returned from Dublin whence it was due at 10.22 p.m., though it did not arrive till 12.12 a.m. on the 9th October. After the collision the train returned to the station and the five rear vehicles were left behind being damaged. It started again at 9.45 a.m. I did not know that the Parsonstown driver wanted to push the train. Had the driver told me he wanted to do so I should have told him it was against the rules.

2. *William Donohue*, driver; 20 years' service, 12½ years driver.—I came on duty at 7 a.m. on October 8th, to drive an excursion train from Nenagh, which train, together with another from Parsonstown, I was to take to Dublin and back, being due back at Nenagh at 11.17 p.m. Had things gone right I was due in Dublin at 11.20 a.m., and was to leave at 7 p.m. My engine was No. 66, a six-wheeled engine four wheels coupled in rear, and a six-wheeled tender, and from Nenagh I brought in a train of 11 carriages and one guard, the train all being fitted with the automatic vacuum-brake. On reaching Roscrea I went ahead with my engine and a brake-carriage, and the engine of the Parsonstown train put the vehicles of its train on to mine, after which I rejoined the train which now consisted of 15 vehicles, still all coupled up with the vacuum-brake. After this we started, I believe, at 8.32 a.m., about five minutes late, the starting and the advanced signal being off for me to proceed. I had had no conversation with Smith, the Parsonstown driver, before starting; but the signalman had told me that he thought Smith was inclined to follow me, and I told him that he could not do so, as the train was too long and was standing over the crossing at the west end of the station; I did not tell the signalman that I did not require Smith's assistance. I went ahead after starting without stopping, and had just passed the down distant-signal, having reached the steep gradient, my speed being about 15 miles an hour (it not having been previously any faster), when without any warning I felt a blow from Smith's engine striking my train. The blow was not a severe one, and no wheels were knocked off the rails in my train. The blow applied the vacuum-brake and stopped the train. I coupled it up where necessary, and with the station-master's consent pushed it back to the station, where I left the rear five vehicles which were damaged. I then started with the 10 front vehicles for Dublin at 9.42 a.m., and arrived in Dublin at 12.40 p.m. Last year on a similar occasion to the present, Smith's engine had followed my train after I had left the station and had caught me up nearer the station than he did this time. I then did not know that he was going to assist me, nor did I need assistance. He helped me over the bank and then left me. I observed no application of the brake by the guard just before the collision. There was a separation between the tenth and eleventh vehicles of about 10 to 15 yards. This I am sure was caused by the collision.

3. *William Ryan*, fireman; four years' service, two years fireman. All the two years with Donohue. I was with him on the 8th October, when my hours were the same as his. I agree with his evidence, except that I did not hear the conversation between him and the signalman. After the collision there was a gap of, I think, more than a carriage length, two or three carriages from the rear of the train. I am sure I felt no application of the brake before the collision.

4. *Timothy Kennedy*, guard; 13 years' service, nine years guard.—I came on duty on the 8th October at Nenagh at 7.20 a.m. to accompany an excursion train to Dublin and back, being due back at Nenagh at 11.17 p.m., with an interval of more than seven hours in Dublin. We started punctually from Nenagh at 7.45 a.m., with a train of 11 vehicles, including three brake-carriages, I being in the rear one. At Roscrea the Parsonstown carriages (three third-class and a third-class brake) were attached in front of the Nenagh carriages, and the train started for Dublin at 8.37 a.m., ten minutes late. The Nenagh part of the train consisted of 11 vehicles marshalled from the rear in the following order:—Third-class brake-carriage, second-class, four third-class, third-class brake, three third-class, and third-class brake. From Roscrea I was in the rear brake-carriage, and guard Walsh was in the brake-carriage next the engine. After starting the train proceeded at a steady pace without slowing or stopping; and after advancing about half a mile from the station I noticed the Parsonstown engine following us then nearly half a mile off. I neither expected nor wanted the engine, but I continued looking towards it out of the door, and as soon as I saw the engine coming quickly, and about 50 yards off or rather more, I put out my hand and waved and then showed a red flag when the engine was close up to me and its speed increasing. I could not say that the driver noticed me, but I saw him looking out through the glass, steam being on his engine. It then struck the van and knocked me off from the side of the door where I was standing and I fell on my face in some turnips by the left side of the line. The engine and train went on about 30 yards and then stopped. I am sure that the train had not separated before the collision, but afterwards I found a separation between the fifth and sixth vehicles from the rear. After the collision I asked Smith what he had been about, but he made no reply. I was shaken by the fall. The injured passengers were some of them in the three damaged third-class carriages. So far as I am aware Smith received no invitation by signal or otherwise to assist my train. I did nothing to check the speed of the train when I saw the collision imminent. I do not think Smith applied his brake before the collision. When I asked him why he had put on more steam when close to my van, he said it was from his putting on the brake that I saw more steam.

5. *John Smith*, driver; 36 years' service, 21 years driver.—I commenced work on October 8th at 7.30 a.m. at Parsonstown to remain till about 10.45 p.m., with a period of about 13 hours at Roscrea off duty. I left Parsonstown at 8 a.m. with engine No. 68 (similar to No. 66), and tender, and with a train of three third-class carriages and a third-class brake-carriage. I arrived at Roscrea at about 8.25 a.m., and after the arrival of the Nenagh train its engine went forward with one carriage, and I then put my train back on to the Nenagh train and then returned to my own line, and the Nenagh engine and carriage returned to the train, which soon after started. After returning to my own line I at once set back to the junction points at the west end of the station and was there when the train, which had been standing over the junction crossing, started. I then

whistled to pass through the crossing, on to the Nenagh line, but the signalman did not at once open the points, but after whistling a second time he did so, when the train might have been as far as the advanced signal, and I then started through the crossing, passed the starting and advanced signals, which were both at danger, going on with the intention of catching up the train and assisting it up the bank. I had had no request by word of mouth from the driver of No. 66 engine asking me to do this, but he had given me a hand-signal (which I had understood to mean that I should assist him), when his engine had been opposite to mine, upon my return to my own line after disposing of my train. I then started and my speed never exceeded 12 miles an hour and I was expecting to overtake the train near the down home-signal, but when I came in view of it round the curve it was about 200 yards ahead. I then followed on and had got within about 100 yards of it when the speed seemed suddenly to slack. I applied the vacuum brake, having previously shut off steam, just after catching sight of the train, the fireman took hold of the sand lever and we then struck the train, my speed being eight or nine miles an hour, and the train to my belief having stopped before the collision. After the collision my buffers were about 18 inches from those of the rear vehicle. Neither I nor the fireman was hurt. I saw the guard just before the collision and he jumped off from his van and tumbled into the turnips. Immediately after the collision I found a separation in the train between the ninth and tenth vehicles to the extent of about 30 yards. This was the only one, and I think it was this separation that had caused the rear of the train to stop. It was out of good feeling that I felt myself justified in disobeying No. 12 of the electric staff rules. I thought I might pass the starting and advanced signal at danger because I constantly do so in shunting and looked upon this as more or less a shunting operation. I had done the same thing last year with a similar train and had then overtaken the train at the level crossing. Donohue then had asked me to help him.

6. *James O'Neill*, fireman; 10 years' service, $2\frac{3}{4}$ years fireman.—I have been with Smith about 15 months, and I was with him on the 8th October, my hours being the same as his. I agree with Smith's evidence, except that I saw no sign pass between Donohue and him.

7. *James Walsh*, guard; 34 years' service, 28 years guard.—I began duty on 8th October at 7.30 a.m. to remain till 11 p.m. From Roscrea I was in the front brake-carriage next the engine. After starting I observed no slowing of speed before the collision, when the speed was about 15 miles an hour. I felt a slight jerk just before it took place. I have no reason to think that any separation of the train had taken place before the collision.

Conclusion.

This collision between a train in motion and an engine following it, to assist it up a rising gradient of 1 in 150, was due to breach of rules and want of judgment on the part of Smith, the driver of the engine. Smith first broke an important rule in following the train at all, but having done so he did not observe sufficient caution in the execution of an operation requiring the greatest possible care. Smith's statement that the rear portion of the train had suddenly stopped just before his engine struck it is not supported by the evidence of any of the servants in charge of the passenger train, and the separation which was found after the collision between the tenth and eleventh vehicles from the front was probably caused by the coupling between these vehicles having jumped off the draw-bar hook when the engine ran into the rear of the train, the severance of the brake-pipe and the automatic application of the brake having immediately ensued; the rear portion of the train was then stopped more quickly than the front portion on losing the hauling power of the engine, and hence the separation between the two portions ensued.

Supposing, however, that Smith is correct in assuming that the rear portion of the train had suddenly stopped just before his engine struck it, he is still guilty of the grave offence of disobedience to No. 12 of the electric staff rules, which forbids the practice of pushing a passenger train from behind, even if the engine is attached to the rear of the train. Smith not only broke this rule, but also ran past two signals at danger and entered upon a blocked section of a single line without any authority for doing so. Even if he received (as he states he did) any hand-signal from Donohue, the driver of the passenger train (and this Donohue denies having given him), that he wanted assistance, it tends but little to mitigate his dereliction of duty.

Smith has been 36 years in the service, and a driver 21 years. He had come on duty on the 8th ultimo at 7.30 a.m. The collision occurred after he had been on duty nearly $1\frac{3}{4}$ hours. His day's work would have been over at about 10.45 p.m., but he would have been about 13 hours unemployed at Roscrea.

O'Neill, Smith's fireman, $2\frac{3}{4}$ years fireman and for 15 months with Smith, corroborates to a great extent his evidence. He does not appear to have reminded Smith that he was transgressing rules in following the passenger train, and must therefore share a portion of the blame chargeable to his driver. His hours were the same as Smith's.

No blame is to be attached to the driver, fireman, or guards of the passenger train. With the exception of Kennedy, the rear guard, the collision took them unawares, the speed of the train being, it is stated, about 15 miles an hour. Kennedy saw Smith's engine following his train when it was some distance off, and as it approached, first

waved his hand and then showed the driver a red flag, which he thinks Smith must have seen. He was under the impression that Smith had put on more steam just before the collision, but Smith told him that the steam he saw was due to the application of the vacuum-brake. He was standing at the van door when the collision occurred, was knocked off into a garden on the side of the line, and was somewhat shaken.

I have, &c.,
C. S. Hutchinson,
Major-General, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

Printed copies of the above Report were sent to the Company on the 11th December.

GREAT WESTERN RAILWAY.

Board of Trade, (Railway Department,
8, Richmond Terrace, Whitehall, London, S.W.,
20th November 1893.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 31st ultimo, the result of my enquiry into the circumstances attending a collision which occurred on the 26th ultimo, at Droitwich, on the Great Western Railway.

In this case, the 1.25 p.m. Midland train from Bristol to Birmingham (consisting of engine and tender, two horse-boxes, two fish-waggons, one milk-van, one brake-van, one bogie composite, one third-class, and one bogie-composite carriages, one brake-van, one composite-carriage, and rear brake-van, fitted with an automatic continuous brake), after passing the junction at Droitwich at about 4 p.m., came into collision with six goods waggons, five empty and one loaded, which had formed part of a Great Western goods train, leaving Stoke Works at 2.50 p.m., and had, after the performance of some shunting operations, been left standing on the down branch line leading to Stoke and Birmingham.

The Midland engine and tender and the two leading vehicles in the train left the rails and were damaged (for particulars, *see* Appendix), and one of the goods waggons was broken up, the others being driven ahead for a distance of 440 yards.

In the permanent-way 35 sleepers, 40 chairs, 128 fang-bolts, eight fish-plate bolts, 86 keys, and 17 pairs of fish-plates were broken, and four rails were bent.

It is stated that five passengers have complained of injuries.

Description.

About 165 yards north of Droitwich station the branch leading to Stoke and Birmingham leaves the main line of the Oxford, Worcester and Wolverhampton Railway towards the east, upon a curve of about 24 chains radius, both lines being level and upon an embankment.

The junction signal-cabin, which contains 29 working levers, is opposite to the junction-points, and on the west side of the main line.

The signals are of the usual character, the advance starting-signal to Stoke, on the branch, being 289 yards from the cabin, and the point of collision being 125 yards further along the branch.

Waggons standing at the point of collision can be seen from an engine approaching them on the down line very soon after passing over the junction, but owing to the sharp curve it is not at first easy to distinguish upon which line they are standing, and when there are waggons standing upon some sidings alongside the branch beyond the point of collision, as was the case at the time the collision occurred, a driver running with signals off would hardly be expected to do so until he had reached the advance starting-signal, 125 yards from the obstruction.

There are sidings on both sides of the line at the junction, and a cross-over road on the branch, the trailing-points of which on the down branch line are only 185 yards from the point of collision. The view of the waggons from the signal-cabin was

much obstructed by buildings alongside the line, three or four of them being entirely hidden.

Evidence.

Arthur West, Midland Company's driver; 22 years in service, about nine or ten years as driver, states: I have been running through Droitwich about 18 years. On the 26th October I came on duty at 7.57 to work the 8.47 a.m. train from Derby to Worcester, and the return 3.39 p.m. train from Worcester to Derby, due at Derby at 6.10 p.m. I worked the same train the previous day and signed off duty at 7.20 p.m. We left Worcester at 3.42 p.m. three minutes late, waiting for the Bristol train. My train consisted of engine, tender, and I believe 12 vehicles. The driving and trailing wheels of the engine and all wheels of the tender are fitted with steam-brake, and on leaving Worcester the guard told me that all the vehicles were fitted with the automatic vacuum-brake. The steam brake and automatic brake are worked with one handle from the footplate. We tested the brake before leaving Worcester. We stopped at Fernhill Heath five minutes by signals, and stopped at Droitwich, using the vacuum-brake at both places. The combined brakes were in good working order at both places. On approaching Droitwich the signals at the Worcester end were on. The distant-signal I passed at danger, but the station signals were lowered as I approached them, and I did not have to use the vacuum-brake, except for stopping at the station. When the train was ready to leave the signals were all off and I left the station at 3.58 p.m., and passed the signals whilst they were off. Before reaching the starting signal on the Stoke branch I saw some waggons on the line in front of me. I looked at the starting-signal, and again at the waggons, and came to the conclusion that they were not on my line, but on the opposite one, or the Midland down line, that is the Great Western up line. I kept watching the waggons when going round the curve, and when I came more in line with them I saw they were on the line in front of me, and I at once applied the brake, and reversed the engine, and put steam against her. I thought by the way the brakes held, and the speed we were going at, and the engine being reversed, that we should have stopped short of the waggons, but we hit them, and the engine left the road, and ran foul of the opposite line of rails. On examination I found two pairs of waggon wheels under my engine, the remainder of the waggons being driven towards Stoke. I cannot say whether any of the wheels left the rails except those under my engine. As soon as the train came to a stand the front guard went forward and the rear guard back to protect the train, and afterwards some men came and took charge of my engine, and I was sent home. Neither myself nor my mate was hurt. When I first saw the waggons, I should say that at least I was 200 yards from them. I eased my engine and reduced the speed a little. I should think I should be about 50 yards from the waggons when I came to the conclusion that they were on the line in front of me. I then applied the brake and reversed the engine. The fireman crossed the footplate of the engine to look at the waggons, but I did not speak to him respecting them. When I first saw the waggons I did all that I considered necessary towards reducing the speed of the train. I was looking ahead all the time after I first caught sight of the waggons, and I applied the full force of the brake as soon as I saw the waggons were on the line in front of me. It was a clear day but damp, and it began to rain just after the collision occurred. We were booked to stop at Droitwich. I was riding on the right-hand side of the footplate, that was on the inside of the curve. It must have been just after I had passed over the viaduct that I first saw the waggons, and at that time my speed was about 15 miles an hour, which is the regulation speed through the junction. I eased the regulator a little, and continued to look at the waggons all the way, but I must have been within 50 yards of them before I made out which line they were on, and I then shut off steam. I daresay I was then running at 25 miles an hour. I had reduced speed to five miles an hour when I struck the waggons, and I would have stopped in another 15 yards. I had 22 inches of vacuum, and the brake acted well. The steam was damping down, and the wind was behind, and there were waggons on the sidings behind those which I struck. I had looked up at the starting-signal to make sure it was off.

Henry Horton, Midland Company's fireman; 11 years in the service, six years as fireman, and four years running through Droitwich, states: On October 26th I came on duty at 7.57 a.m. to act as fireman to driver West. I was his fireman the previous day, and left duty with him. I have heard the driver's statement read and it is correct. I cannot say at what speed we passed the junction. When I first saw the waggons, I thought they were on the other line of rails or in the siding. We would then be about the starting-signal. I crossed over to my own side, and I saw the driver put the brake on, and I could then see the waggons in front. The driver did not speak to me about the waggons, nor did I speak to him. I was on the left-hand side of the foot-plate when we started, and crossed to the right-hand side to look for the advance signal, and it was then that I saw the waggons first. I did not notice my driver reduce steam before that time. I think our speed at the advance signal was from 20 to 25 miles an hour. After I had crossed back to my own side the driver shut off steam, reversed, and applied back-steam, and put on the brake. I made sure the waggons were on the other line. I think our speed when we struck them was six or seven miles an hour. I did not look at the brake gauge. Neither I nor my driver was knocked down.

William Henry Brookes, nine years in the Midland Company's service, two years as passenger guard, and four years running through Droitwich, states: On October 26th I came on duty at 7 a.m. to work the 7.34 a.m. train from Worcester to Birmingham, and to finish work at 6.45 p.m. On the previous day I was on duty from 1 p.m. to 9 p.m. On October 26th I left Worcester in the rear brake-van of the 3.39 p.m. train. Shortly after leaving Droitwich I felt the brake go on hard. It sent me forward slightly. I steadied myself and looked out on the off side, and then bumped against the draught board. I then saw the engine leave the rails, and when we stopped I went back to the junction to advise the signalman. I was standing up when the brake went on. We were running with 20 inches of vacuum. I cannot estimate the speed when the brake went on, but we were not running fast. I felt a shock from the collision. I should say that this was at the outside 10 seconds after I felt the brake applied. The driver must have been pretty close to the waggons when he applied the brake. It was raining when I got out of my van.

John Bennett, 16 years in the Midland Company's service, two years passenger guard, and three years as fish guard, states: I have been used to running through Droitwich 5½ years. On October 26th I worked the 6.25 a.m. train from Derby to Bristol, due at 11.45 a.m., and the 1.28 p.m. Bristol to Derby, due at 6.10 p.m. I finished duty on the previous day at 4 p.m. After leaving Droitwich I felt a sudden shock. I think it was from the driver putting on the brake, and I afterwards felt a second shock, and this was I think from the collision. I was riding

in the van, the third vehicle from the rear. Guard Brookes, of Worcester, who was riding in the rear van went back to tell the signalman at Droitwich junction what had taken place. I was standing up sorting parcels, and was knocked down by the collision. The application of the brake threw me against my brake-handle, and a few seconds, hardly half a minute, afterwards, the shock of the collision knocked me down. The brake gauge showed 20 inches of vacuum. I think our speed when the brake was applied was about 15 miles an hour, and it was considerably reduced before the collision took place. All the buffers were compressed.

Edward Pearce, 27 years in the service of the Midland Railway Company, 20 years as guard, and accustomed to run past Droitwich 11 years, states: On October 26th, I came on duty at 6.10 to work the 6.40 a.m. passenger train from Birmingham to Bristol, due at Bristol at 11.37 a.m., and the 1.28 p.m. passenger train, Bristol to Birmingham, due at 4.34. I worked the same trains the previous day and left duty at 5 p.m. On October 26th, we left Bristol at right time and arrived at Worcester four minutes late, caused by delays on the Midland Railway. We left Worcester four minutes late, viz., at 3.43 p.m. My train consisted of the following vehicles, 12 in all, equal to 13½ ordinary vehicles, exclusive of engine and tender, made up in following order:—One engine; one tender; two horse-boxes, loaded, four-wheeled; two fish-waggons, empty, four-wheeled; one milk-van, empty, four-wheeled; one van (guard rode in this), four-wheeled; one bogie composite, eight-wheeled; one third, six-wheeled; one bogie composite, twelve-wheeled; one van, four-wheeled; one composite, four-wheeled; one van, four-wheeled. On approaching Fernhill Heath, the signals were on, and we stopped, and were delayed five minutes. We arrived at Droitwich at 3.57 and left at 3.58 p.m. The first intimation I had of anything wrong, after leaving Droitwich, was feeling a jar, which I thought was from the application of the brake. The train came to a sudden stop, and on looking out I saw the engine foul of the opposite line, and I got out and ran to Clay and Newman's siding to block the line. The vehicles on the train that were off the road were as follows:—Engine and tender, two horse-boxes. None of the passenger coaches were off. No passengers complained of being injured at the time. Our speed over the junction was 15 or 20 miles an hour. The collision took place about half a minute after I felt the brake go on, and the speed seemed to me to be very slightly reduced when the collision took place. We had 20 inches of vacuum. I was riding in the fifth vehicle from the engine. I was thrown down among the luggage, and my wrist was slightly grazed, but I have not been off duty at all.

Edward Smith, driver; in Great Western service since October 1871, and driver since April 1886, states: On the 26th October I came on duty at Stourbridge at 5.45 a.m. I worked the 6.45 a.m. Stourbridge to Round Oak goods and mineral train. We worked to Round Oak, then back to Droitwitch, and on to Stoke. We then left Stoke at 2.50, and Clay's siding at 3.10, and arrived at the north end of Droitwich at 3.15 p.m. The van was next the engine on leaving Clay's siding. The train consisted of two loaded and eight empty waggons, including the van. The guard ordered me at Clay's siding to stop short at Droitwich to hook off three waggons. We did so, leaving six waggons standing on the branch up line on the Droitwich side of the cross-over road, and commenced shunting on the drops. After doing our work there we came to the shed siding. I cannot say how many waggons we shunted out of the drops and shed siding on to the six waggons standing on up branch line. After the shunting was done I was ordered to set the waggons back through the slips on to the down branch line to allow an up Midland goods train to pass. This was done. I cannot say the exact time, but it was not many minutes before the Midland passenger train came. After we got on to the down branch line the points were reversed, and I drew the waggons on to the down main line. The guard then hooked off the engine and told us to run round the train with the engine. We did so, and the yardsman hooked the engine on at the junction cabin, and we then drew over the junction on to the main line, towards Hartlebury junction, to allow the Midland passenger train to pass, and we stood whilst this train did pass. When I ran round the train I did not notice that we had lost any of the waggons I had on my train, but some were left on the branch line. The Midland train passed us, and directly afterwards I saw that it had come to a standstill. When we left Stoke the van was behind the waggons. The drops mentioned are on the down side of the railway. I think the waggons that were run into were the six left on the branch line when we commenced shunting operations at Droitwich. The speed of the Midland train when it passed the junction cabin was about 12 miles an hour. I did not see or hear the collision, nor did I see the Midland driver apply his brake. I did not hear any whistling. I was standing some way inside the main line down advance-signal. When we were shunting I cannot remember how many shunts we made, or how many separate lots of waggons we knocked back on to the six waggons we had left standing on the up branch line. After the last shunt I pushed the whole train back through the cross-over road on to the down branch, sufficiently far for my engine to be clear over the points, and as soon as these were removed I drew the train forward past the junction cabin along the down line. I received a message from the signalman to run round my train. Before pushing my train back through the cross-over road I got a signal to set back from my guard who was standing in the 6-ft. way several waggon lengths away from the engine. The van was next to the engine. I did not get any signal from my guard to draw my train towards the junction and station along the down branch line, after we were clear through the cross-over road, but I did so on the strength of the message from the signalman. Before starting I satisfied myself that all the signals were at "Danger," and after proceeding for some distance I looked back along the branch, but I did not see that I had left any waggons on the line. After stopping between the signal cabin and the station I was unhooked and ran round my train. When I was passing through the branch line cross-over road again I was looking in the direction the engine was running, but I did not see any waggons on the down branch line. As soon as I had got upon the down branch line I looked towards the signal cabin, and as soon as the points had been recovered I went along the down branch to my train, and after being coupled on drew it forward on to the down main line. Foreman George Hughes was in charge of the shunting.

Frederick Skelding, in the service of the Great Western Railway Company 9 years, and a fireman 4½ years, states: On October 26th I was firing for driver Smith. I came on duty at 5.50 a.m. On the previous day I had left duty at 6.25 p.m., after 12½ hours duty. I had been working with driver Smith all day. When my train was being set back through the cross-over road, after the last shunt, I was on the right-hand side of the engine; but on the cross-over road I crossed to the other side to put on the brake. When we started ahead I could not see the tail of the train from my side of the engine. When going through the cross-over road the second time, to get round the train, I was on the left-hand side. I was looking forward, but did not see any waggons standing on the branch.

William Smout, goods guard, 20 years in the Great Western Company's service, and a guard 17 years, states: On October 26th I came on duty at 6.15 a.m. at Stourbridge junction to work till 4.50 p.m.

I had left duty at 6 p.m. on the previous day after 11¾ hours duty. We worked to Stoke, and left that place at 2.50 p.m. with engine running tender first, eight empties and brake-van, the van being last. Our next stop was at Clay's siding, where we picked up a load of salt and reversed the brake-van, putting it next to the engine, so as to save time at Droitwich. I rode on the buffers of the last waggon from Clay's siding to Droitwich, about three-quarters of a mile. On arrival at Droitwich I left six waggons on the branch line between the cross-over road and the junction, and then shunted five waggons on to them. I did not hook them on, but the foreman did. He told me so. We then went on to the drops and picked up eight, and set them back to the eleven on the branch line. I coupled these on. We then had orders to shunt through the cross-over road to the down branch line to allow a Midland goods train to pass. On making the first shunt, three of the waggons went up to the six standing on branch line, but the two others did not. We closed them up to the others, and I coupled them together. I coupled the last two, but the foreman said he had coupled the first three. After receiving orders to shunt, I did so, giving a signal to the driver to set back, and the whole train set back on to the down branch line. This would be about 3.55 p.m. When the train crossed over, I went towards the cabin to take the numbers of the other waggons I had to pick up. The engine drew the train on to the down main line, after standing about one minute on the down branch line. I hooked the engine off, and told the driver to run round the waggons, and he did so. I went up the left-hand side of the train, taking the numbers of the waggons on the train, and when the engine came against the waggons the foreman hooked it on. I had uncoupled in the middle of the train, but received orders from the signalman to draw up on the down main line towards Hartlebury to clear the junction for the Midland passenger train to go. This was done, and the Midland train passed. The signalman then called my attention to the Midland train standing, and on looking up my train I knew in a moment what was wrong, as I found that the six waggons I had brought from Clay's siding had been left on the down branch line. I did not notice that my train was not all complete until the signalman drew my attention to the Midland train standing. It is a practice when we have a few waggons to reverse the van at Clay's siding, and it is done to save time. If the van had been in the rear on this occasion, the train would have been run over the junction, and the van placed in the drops, and the waggons then put back on to the up branch line. I coupled both ends of the two waggons myself to the waggons standing on the main line, and the remainder on front portion of train. I did not know of the Midland passenger train being delayed at Fernhill Heath whilst shunting was going on at Droitwich. I was on the down main line when the collision took place. I saw the Midland train passing, but only just after it had started. Yardsman Hughes was in charge of the shunting. I would have been responsible for my train being properly coupled up before it went right away, but we had some more waggons to put on. I did not go back on my van when my train was being pushed back on to the down branch line. I got on as the train was passing the junction towards the station, and I uncoupled the engine when it stopped.

George Hughes, foreman yardsman, Droitwich, 19 years in the Great Western Company's service, about 1¾ years foreman at Droitwich, states: On October 26th I came on duty at 7 a.m. to work till 7 p.m. These are my regular hours for one fortnight, and the next fortnight I have the night shift. I met the 1.35 p.m. train from Stoke at the junction. The train consisted of nine waggons. The guard hooked off three and went into the siding, and fetched some waggons out and shunted them back to the six waggons left on the branch. I cannot say how many waggons were so shunted, but I should think three. I hooked them on to the six waggons standing on the branch line, and as the shunts were made, I kept hooking the waggons on as they came up. I hooked up in three places on the train. I am perfectly certain I hooked the three waggons on to the six waggons standing on the main line. The train was made up to 20 waggons and the van, and was then shunted over on to the down branch line. I then went to the signal-cabin. As soon as the train was shunted, the points were reversed, and the train drew up to the junction cabin. When the Midland goods train had passed for which we shunted, the guard instructed the driver and sent the engine round to the other end of the waggons. I then stood at the junction cabin, the train standing between there and the station. The guard, or I myself, I cannot be sure which, hooked the engine on to the train at the junction cabin. I knew the guard was with the front of the train. I did not notice that the whole of the train was not complete and that some waggons were left on the branch line. My attention was drawn away to the up pick-up train which arrived about the same time. I was in the station when the Midland passenger train arrived and left Droitwich. I was in charge of the shunting operations, and I was responsible that the train was properly coupled up. As I have said, I myself coupled the first lot which was shunted out on to the six rear waggons, and I told the guard I had done so. It was after the last shunt that the guard coupled in two places. When the whole train was pushed back through the cross-over road on to the down branch I was at the signal-cabin. The guard went back on the van, which was next to the engine. I gave no signal for the train to come forward. The driver had the order from the signalman. I could not see the branch line from where I stood. The drops were full of waggons. The whole train came past me as it was being drawn forward towards the station, at least all the waggons which were attached did so. I did not take any note of the number which were attached to the engine. I thought that the guard would have seen that all were attached before coming forward.

John Edwin Bennett, signalman, Droitwich junction, 24 years in the Great Western Company's service and five years as signalman at Droitwich junction, states: On October 26th I came on duty at 2 p.m. to work till 10 p.m. The 1.35 p.m. train ex Stoke was signalled to me at 3.6, and I got "Train on line" at 3.7. It arrived at 3.10 p.m. Some shunting was done at the drops and at the station. At about 3.30 p.m. Clay's siding told me, on the needle instrument, that a Midland goods train was waiting, and the up pick-up was signalled as under from Hampton Lovett:—

"Is line clear"	3.32 p.m.
"Train on line"	3.40 „
"Train arrived"	3.48 „

I instructed the guard of the train from Stoke to shunt through the slip on to the branch, and then to draw down the main line to allow the Midland passenger and goods trains to pass. I gave "Train arrived" to Clay's siding, and a Midland train left there at 3.40 and passed the junction at 3.46 p.m. The Stourbridge train was standing between my cabin and the station when the Midland goods train passed. I told the driver of the Great Western goods train, and the guard, that I wanted them out of the road for a Midland passenger train, and as soon as the Midland goods train had passed, the Great Western goods engine ran round the waggons, but I cannot say who coupled the engine on. The train then drew over the junction towards Hartlebury. The Midland passenger train had been blocked back at Fernhill Heath, and it was signalled as follows:—

"Is line clear"	3.49 p.m.
"Train on line"	3.50 „
"Train arrived"	3.55 „
"Left station"	3.57 „
"Passed junction"	3.58 „

After the Midland passenger train had passed over the junction, I put the signals to danger, and commenced to book the Stourbridge goods train up. I then went out on to the stage and saw the Midland train standing beyond my starting-signal, and I called to guard Smout and asked him what was the matter. I thought the driver had mistaken my starting-signal, and I pulled it off again, and I then saw the guard of the train running back towards the cabin. I had all right from guard Smout before allowing the Midland train to go. (Smout denies this.) I should think the Midland train would be going at 10 or 12 miles per hour past my cabin. The obstruction was not in my sight or I should not have allowed the Midland train to go. "Is line clear" was asked for the Midland train from Fernhill Heath at 3.45 p.m. I thought it best to deal with the trains as I did to expedite the working. There is a house on the east side of the branch line which almost, or quite, obstructed my view of the branch line where the waggons were standing. I am quite sure that guard Smout went back on his van, which was next the engine, when the train was being pushed back on to the down branch line after the last shunt. I saw him get up on the 6-ft. side, and as he went back he was facing me, standing on the step of the van, with his arm through the handle. I did not see him as the train was being pulled towards the station.

Guard *Smout* (recalled) denies positively that he went back on his van, and asserts that he got on to it as the train was being pulled towards the station, having himself been on the down sidings.

Driver *Smith* (recalled) states: I am unable to say whether my guard did or did not come with the train on his van, when I was pushing it back on to the down branch line, after the last shunt. I did not see him after we started back, until he uncoupled the engine when I had drawn the train along the down line towards the station.

Fireman *Skelding* (recalled) states; Guard Smout gave a signal from the 6-ft. way for the engine to push the train back on to the down branch. I did not see him again until we stopped on the down main line between the junction and the station. He was then on the step of his van, on the 6-ft. side. I did not see when he got up on to the step.

Thomas Preston, in the service of the Midland Railway Company 20 years, an engine-driver about 10 years, and accustomed to run past Droitwich as driver and fireman for about 16 years, states: On October 26th I came on duty at Saltley at 8 a.m. to perform any duties that might be required of me. I was ordered to work a special goods train from Birmingham to Hereford, and I left Lawley Street for Washwood Heath at 12.35 p.m. and Washwood Heath for Hereford at 1.20 p.m. My train consisted of engine, tender, and about 20 loaded and 12 empty waggons. Nothing unusual took place between Birmingham and Droitwich. On approaching Clay and Newman's siding the signals were at danger, and I brought my train to a stand at the starting-signal. After being there between 20 and 30 minutes the starting-signal was lowered, and I proceeded on the journey. On approaching Droitwich junction the distant-signal was at danger, and I passed it in that position. When about half way between the distant and home signals, the home-signal was lowered for me to proceed. I noticed some waggons standing on the opposite line of rails on the Stoke Works side of the junction starting-signal. I had a conversation with my fireman as to whether there was a possibility of the waggons having broken loose, and particularly noticed the drawbar hook and links at the Droitwich end, and saw they were in good condition. As my train passed between the junction and the station I saw an engine at the Gloucester end of some waggons on the opposite line of rails. The signalman at the junction was on the stage outside the signal-box, and called to me asking in which direction I was going at Worcester and I told him. A shunter was on the ground near to the junction signal-box, and I was satisfied the waggons standing on the branch were well within the sight of the signalman and shunters, and, an engine with waggons attached being on the opposite line of rails, I was satisfied the men were well aware of the position of the waggons. It is a very unusual thing during the day for a goods train to pass Droitwich with the main lines all clear of shunting operations, as shunting on the main line with one train or another is being carried on nearly all through the day. Had I noticed a defective coupling on the waggons that were standing on the Stoke Works side of the junction or had the slightest idea that the men were not aware that the waggons were standing there, I should certainly have taken care to have told them. On arriving at Fernhill Heath on the return journey the following day my train was brought to a stand by the signals at that station being at danger, and during the time I was standing there I had a conversation with the Great Western signalman respecting the collision that had taken place at Droitwich the previous day. I said that I had noticed the waggons standing on the Stoke Works line the previous day, and if I had had any idea that the men at the station were not aware that the waggons were standing there, I should have told them. I left duty at 10.45 p.m. I arrived at Hereford at 7.20 p.m. I then had to do some shunting before leaving duty. I was blocked by other trains at Hereford. I left duty at 11.25 p.m. on the 25th, having come on duty at 8.10 p.m. I went to Hereford and back that day with a special cattle train. I did not ask for relief. I left duty at Saltley. I put the cattle off at Camp Hill.

Samuel Lincoln, in the service of the Midland Railway Company 18 years, and fireman 15 years, passed to act as engine-driver when necessary, about three years, states: On October 26th I was firing for driver Preston. I came on duty with him. I was also with him on the 25th. When approaching Droitwich junction, and when I first sighted the waggons they were on the opposite line of rails, and I noticed an engine with some waggons attached proceeding towards the station. I had a conversation with the driver respecting the possibility of these waggons having broken loose, but on noticing that the drawbar hook and the links at the Droitwich end of the waggons were in good condition, and as the main line is continually, during the day, occupied by waggons standing upon it in this manner, I arrived at the conclusion that the men with the waggons and the signalmen were well aware of their position. If I had had the slightest idea that the waggons were standing there without the knowledge of the signalmen and the shunters I should have taken care to have called their attention to them.

Conclusion.

The circumstances under which this collision, which narrowly escaped being a very serious one, occurred, are as follows:—

At about 3.10 p.m. a Great Western goods train, described as the Stourbridge goods train, which had left Stoke at 2.50 p.m., and was made up of engine and tender, running

tender first, guard's van, and nine waggons, arrived at Droitwich junction on the up branch line, and stopped with the rear vehicle just clear of the branch line cross-over road. The six rear waggons were then uncoupled, and the engine and the remainder of the train drew forward and performed some shunting operations on the sidings upon the up side of the line, during which operations, three or four lots of waggons, making 13 or 14 in all, were shunted back on to the six rear waggons, the first lot of three waggons being, according to his statement, coupled on by foreman George Hughes, who was in charge of the shunting. In order to clear the line the whole train, then consisting of engine and tender, brake-van, and 19 or 20 waggons, was pushed back under an order of the signalman and a signal from the goods guard, through a cross-over road on to the down branch line, and was then drawn along this line past the junction, so that the engine might run round the train, but the six rear waggons, the same which had originally been left standing on the line while the shunting operations were in progress, were left behind on the down branch line, 413 yards from the junction signal-cabin. The engine was then uncoupled, and run round to the front of its train, which it drew forward along the down main line clear of the junction, and when running round it came for the second time through the branch line cross-over road, stopping at a point only 180 yards from the six waggons standing on the down branch line, before setting back on to its train.

The Midland passenger train, which had, during the shunting operations, been checked at Fernhill Heath station, arrived and stopped at Droitwich station at 3.55 p.m., started again at 3.57 p.m. with all the signals off for it to proceed on the down branch line, passed the junction at 3.58 p.m., and came into collision with the six waggons which had been left upon the line, breaking up the rear waggon and driving the other five for a quarter of a mile ahead, the engine, after running for about 40 yards, being thrown off the rails by the wheels of the broken-up waggon, which had got underneath it.

The driver of the Midland train states that he saw the waggons from a point which is over 200 yards from the place where they were standing, but came to the conclusion, after looking at the starting-signal and seeing it standing off, that they were on the other line. He nevertheless eased his regulator, and reduced speed a little, but, although he states that he continued to look at the waggons, he did not appreciate the fact that they were on the line in front of him until, according to his estimate, he was within 50 yards of them, when he shut off steam, reversed his engine, applied back steam, and put on his continuous brake, which seems to have acted well. The driver estimates the speed, when he applied the brake, at 25 miles an hour, and the speed when he struck the waggons, at only 5 miles an hour, but, although the former esitmate is possibly correct, the latter, judging from the effect of the collision, is certainly incorrect, and I have no doubt that the speed was really double that at which the driver estimated it, so that it is most fortunate that worse consequences did not ensue.

I think that this driver would have shown better judgment if, when he first saw the waggons, and, as is shown by his own action, was evidently doubtful as to their position, he had at once taken steps to get his engine well under control, in which case he ought to have had no difficulty in bringing the train to a stand before arriving at the point of collision, for the distance at which he should have made out clearly on which line the waggons were standing was considerably more than 50 yards. Still, looking at the facts, that he was running with all the signals off for him, and that the view of the line, owing to the curve and the surroundings, is not at all satisfactory, I am not disposed to find much fault with this man, who had at the time been on duty for eight hours.

It is perfectly certain that at the time that the goods train started forward, after being shunted on to the down branch line, the six rear waggons were not coupled to it, and I have formed the conclusion that they never were properly coupled to the first lot of three waggons which were, during the shunting operations, knocked back on to them, although the foreman, George Hughes, no doubt thought that he had done so, as he told the guard at the time and has stated in his evidence.

It is quite true that waggons occasionally come uncoupled when being shunted, but it would have been a most extraordinary coincidence if the very six waggons originally uncoupled had been the ones to part, if they had ever been properly coupled on again.

I consider therefore that the foreman, who had at the time been on duty for nine hours, is the person primarily responsible for this collision, but I cannot but think that if the guard, William Smout, had been more alive to his duties he would not have omitted to observe when the train was proceeding along the down main line, that

nearly one-third of it was missing. There is some discrepancy in the evidence as to whether or not this guard went back with his train when it was shunted on to the down branch line. He says himself that he did not, while the signalman and foreman Hughes declare that he did, but there is no necessity to consider which of these conflicting statements is correct, for the train was really at the time in charge of the foreman, and the shunting arrangements had not been concluded. Nevertheless guard Smout, who had at the time been on duty for $9\frac{3}{4}$ hours, cannot be held to have been entirely relieved from responsibility for the state of his train.

Driver Smith, the driver of the goods train, might have been expected to see the waggons when he came on to the down branch line the second time in running round his train, and I think he ought to have done so if he had been keeping a good look out. He had at the time been on duty for $10\frac{1}{4}$ hours.

I do not consider that the signalman in the junction signal-cabin can be blamed. It is true that of the six waggons the two nearest to him were just visible from his cabin, the others being entirely hidden by an intervening house, but with the sidings beyond full of waggons it was most difficult for him on the sharp curve to see where these two waggons were standing, unless he had reason to believe they were on the branch line, and had looked carefully for them.

The collision should be a lesson to both shunters and goods guards to take the greatest possible care that all shunted waggons are properly coupled up.

In conclusion I must call attention to the hours of work of goods driver Thomas Preston and fireman Samuel Lincoln, of the Midland Railway Company, who were called in evidence, and who it appears were on duty for $14\frac{3}{4}$ hours on the day of the accident, and for $15\frac{1}{4}$ hours on the previous day. These hours are excessive, and if the timing of their train cannot be altered arrangements should be made for the relief of the men working it.

Driver Edward Smith and fireman Frederick Skelding, of the Great Western Railway Company, were also on duty for half an hour over twelve hours on the day before the accident.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) F. A. Marindin,
Major, R.E.

APPENDIX.

Particulars of Damage to Rolling Stock.

Engine No. 895.—Smoke-box door, front plate, fall-plate on buffer-plank, vacuum-pipe, and hand-rail at leading end damaged; left-hand cylinder cover and exhaust-cocks and gear broken; left-hand leading outside and auxiliary axle-boxes broken; leading foot-steps broken; left-hand top feed-pipe broken off; weigh-bar shaft, two of the slide-bars, and two eccentric-rods bent, and eccentric-liners broken; spectacle-plate badly bent; left-hand leading, left-hand driving, and right-hand trailing-springs damaged; steam-brake gearing all damaged; steam-brake cylinder broken; one sand-box knocked off; left-hand leading horn-plate bent; ash-pan door and plates carrying injectors and feed-pipes bent or broken, &c.

Midland horse-box No. 28.—Two headstocks broken; seven floor-boards broken; one hose-pipe broken; one door-stile damaged; two corner pillars damaged; one diagonal damaged; one middle-bearer damaged, and body of vehicle forced out of position.

London and North-Western horse-box No. 21.—Broken iron-buffer, &c.

Printed copies of the above Report were sent to the Great Western and Midland Railway Companies on the 11th December.

LONDON AND SOUTH-WESTERN AND LONDON, BRIGHTON, AND SOUTH COAST JOINT RAILWAYS.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
31st January 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 19th ultimo, the result of my enquiry into the circumstances connected with the accident which occurred on the 12th ultimo at Portsmouth Harbour station, jointly owned by the London and South-Western and by the London, Brighton, and South Coast Railway Companies.

In this case, about five minutes after the arrival of the Brighton Company's 11.35 a.m. passenger train from Brighton at Portsmouth Harbour, which it reached at 1.40 p.m., 13 minutes late, the roof covering the arrival island platform was blown down by a high gust of wind. Two out of the only three passengers in the train had left the platform before the roof fell, but the third, as he was passing along the platform, was struck by a portion of the roof and sustained a scalp wound. The driver and guard of the train, who were both on the platform, were injured on the head, the guard seriously. A porter, who was wheeling an empty luggage cage along the platform, escaped unhurt by crouching down by the side of the cage. The fireman, who was on the foot-plate of his engine, jumped on to the ballast when he heard the roof falling, and was also uninjured.

The train itself was but little damaged, some carriage windows being broken, but a double row of cast-iron columns supporting the roof over the platform, extending for a length of about 480 feet and about 21 feet wide, was completely destroyed, the columns being uniformly broken off about 1 ft. 9 ins. above the platform, as well as near the top, the roof falling nearly vertically on to the platform.

Description.

Portsmouth Harbour station was opened in year 1876 and contains four lines of rails, one for the departure and two for the arrival of trains and an empty carriage line. The arrival lines, which are on the south side of the station, are on each side of an island platform, and this was roofed over for nearly its entire length. The roof consisted of zinc, timber, and iron, the iron longitudinal and cross members being supported by a double row of cast-iron columns having a total height of about 14 feet. The rows are 7½ feet from centre to centre, where the platform is 20 feet wide, but toward the east end of the roof, where the platform diminishes in width to about 16 feet, they are only two feet from centre to centre; the longitudinal distance between the columns is 20 feet, and there are in all 50 of them from the east end of the roof to its junction with the roof at the pier end of the station, which is also connected with the roof over the departure platform. The greater part of the harbour station is built on cast-iron piles, supporting wrought-iron main and cross girders, and the roof columns are bolted down to cross girders 20 feet apart, which also support the platform. For the lower 3 ft. 7 ins. the columns are octagonal in shape and 10 inches wide, for the next 7 ft. 5 ins. they are circular and five inches in diameter, for the remaining three feet they are of the same internal diameter, but have projections on the outside for fixing the cantilevers which carry the roof. The metal ought throughout to have been half an inch thick, but there are some slight inequalities observable in some of the broken fragments. There is some ornamental work, both at the bottom and top of the round part of the columns, that at the bottom extending for about six inches above the octagonal portion, and it was at the top of this ornamental portion, which is four feet above the bottom of the columns, that they all broke off, the fractures at the top being generally just at the top of the ornamental portion. The roof projected outwards, with a slight inclination upwards, for seven feet from the centres of each row of columns, and was finished off at each side by an ornamental wooden valance about three feet deep.

In falling the east end of the roof came over southward about 10 feet, and damaged about 50 feet of the parapet and railing which bound the station on the south side; its line of fall was then nearly straight for a length of about 280 feet, when it fell about fair on the platform; it then inclined northward for about 100 feet, being about 10 feet to the north at the west end of these 100 feet, and then gradually inclined southward towards the standing part of the roof at the west end of the platform.

With regard to the force of the wind at about the time the roof fell, I have fortunately been able to obtain the result of an observation which was taken at 2.15 p.m. (half an hour after the accident) at Coaling Point in the dockyard, about 1,400 yards north of the Harbour station, and about equally exposed to the southerly gale which was blowing at the time. This record gave a maximum speed of 40 miles an hour (a force of 7·9 lbs. per square foot), and an average speed of 35 miles an hour (a force of 6 lbs. per square foot), as the result of three observations.

Evidence.

1. *Henry Sparshatt*, station inspector at Portsmouth Harbour station.—I have held this position 13½ years and I was on duty on the 12th December at about 1.45 p.m. I was standing at the up end of the up platform attending to the train due to start at 1.50 p.m. for London. I was looking across to the

down platform, when a sudden gust of wind seemed to strike the shelter on that platform and to lift it up, and it at once fell, beginning at the east end and following on to the west without any apparent interval. A train from Brighton due at 1.27 p.m. and which had arrived at about 1.38 p.m. was still standing on No. 2 line, and some of the falling roof struck the engine and three or four carriages behind it. The driver who was on the platform was covered by the roof and had to be pulled out; he was but slightly injured. The fireman was on the foot-plate and escaped. Parsons, the rear guard, was talking to the driver and was badly injured. Catt, the injured passenger, was walking with Parsons. The front guard and the other passengers had left the platform before the roof fell, at about 1.45 p.m. The wind had been blowing hard lor some time, but not so as to prevent the boat leaving for Ryde at 1.20 p.m. The wind was south with a little west in it. The roof of the up platform was damaged soon after the other roof was blown down. The train could not be set back till part of the roof had been cleared. I can remember heavier winds than this, but they were not in the same direction and no damage was ever done by them.

2. *Charles Pearson*, porter in the joint companies' service; 19½ years service; 8½ years at the Harbour station.—I came on duty at 9 a.m. to remain till 7.30 p.m. on the 12th December. Just after the arrival of the train from Brighton due at 1.27 p.m. I was engaged on the down platform in pushing one of the empty luggage cages towards the pier head. I had moved the cage forward about 40 yards and was about 30 or 40 yards from the barrier when I heard a noise proceeding from the east end of the platform. I had no time to look round, but feeling sure the roof was falling I knelt down behind the cage at the pier end of it and was thus protected from the falling roof, which came on to the top of the cage. I was not hurt. When I stopped I had just got beyond the engine and I saw the guard and a passenger coming towards me. I did not see the driver or the fireman. I think the roof began to fall from the east end. The wind was very strong. I have never known a stronger one, but I was able to push the cage. I managed to get out in about two minutes.

3. *John David Goff*, driver; 27 years' service, 16 years driver.—I commenced work on December 12th at Fratton at 8.15 a.m. to sign off at 2.20 p.m. I had brought in the 11.35 a.m. passenger train from Brighton, due at Portsmouth station at 1.27 p.m., but arriving at 1.40 p.m. We had been detained waiting for a London train at Ford junction. My engine was a single-wheeled tender-engine, running chimney in front, and the train consisted of nine vehicles, fitted throughout with the Westinghouse brake. The train ran into No. 2 road, the engine stopping about 20 yards from the buffer-stops. The wind had been high all the way down, but was very high along the platform. I only remember one other case of so high a wind, viz., at Ford junction, about seven years ago, when the sheets were blown off the goods waggons of the goods train I was driving. After the arrival of the train I stepped on to the platform and went as far as the end of the tender to put my running bill into the box on the tender. I had done so, and had stepped back on to the platform to return to the foot-plate, when hearing a crash I looked over my left shoulder and saw the roof just above my head lifting towards the carriages. Seeing this I made a rush for jumping off the platform into No. 1 road, but before I was able to do so I was caught by the south valance of the roof, which struck me on the head and knocked me down underneath the roof, close to the edge of the platform over No. 1 line. I found I was able to crawl out about opposite the engine. I was off duty four days. The fireman was on the foot-plate, but on hearing the crash jumped off into No. 1 road and escaped without injury. One of the columns fell on to the tender and another on to the framing of the engine. I passed guard Parsons about the middle of the tender as I was going to the back of it. He was on his way round to No. 4 road. I did not see him again until after I had crawled out, and I then found him opposite the foot-plate, injured in the head, I think, by a falling column, and with a piece of wood across his chest. He was lying on his back with his body on the platform and his legs hanging on the edge of the platform. I saw no one else. The roof fell about 1.43 p.m. I saw only two ladies pass away from the train before the accident.

4. *Robert Parsons*, guard; 15 years' service, 14 years guard.—I commenced work at 8.45 a.m. on the 12th December to sign off at 10.45 p.m. with an interval from 1.37 p.m. to 3.20 p.m. at Portsmouth, and from 5.15 p.m. to 8.55 p.m. at Brighton. I was guard of the 11.35 a.m. passenger train from Brighton for Portsmouth Harbour where it was due at 1.27 p.m. We lost time at Ford junction and at Chichester attaching a horse-box, and from Havant (where the horse-box was detached) the train consisted of engine, tender, and nine vehicles, the Westinghouse brake being in operation throughout the train. I was in the rear vehicle, which was a brake-van. The front guard kept the time, but I know we reached Portsmouth Harbour some minutes late, with not more than three or four passengers in the train. The wind was very high throughout the journey, and particularly so along the Harbour platform. After the arrival of the train I was walking along towards the engine, pulling up windows as I went. I had about reached the rear part of the front van when a tremendous gust came on, and I heard the roof rattle and lift towards my left, and I made a dash at the door of the van, and I had got on to the step when something struck me, I do not know what, on my back and the back of my head. I was knocked right off the platform on to the ballast between the train and edge of the platform, and the first thing I recollect was when I was being lifted on to a stretcher. Catt, the passenger who was injured, was walking alongside of me on my left when the roof fell. He seemed to me to drop off towards the left. I do not remember seeing a porter wheeling an empty luggage cage as I was walking along the train, when I had no difficulty in keeping my feet. I may have got as far as the tender and then rushed back to the van door on seeing the roof begin to fall, but I am still of opinion that I fell on to the ballast opposite the van door. I am now feeling much better, but have not yet returned to duty.

Conclusion.

The fall of the roof over the island platform on the arrival side of Portsmouth Harbour station must, in the absence of any other probable cause, be attributed to the effect of a sudden gust of wind during the prevalence of a gale from the south and south-south-west. It would have been natural to suppose that the effect of the gust would have been to blow off the zinc covering of the roof, as took place to a small extent with the roof covering the up platform. Instead of this, however, the roof covering itself did not give way, but the wind-pressure was transmitted towards the base of the cast-iron columns (a double row of which supported the roof), with the result that

one (or more) of these was at once broken off four feet above its base (which was bolted down to wrought-iron cross-girders, connecting the cast-iron columns employed in the substructure of the station) this being immediately followed by the similar fracture of the whole of the 49 remaining columns, and the fall of the roof, &c. on to the platform, and to a certain extent on to the arrival lines on each side of the platform. The direction of the platform is about east and west, and at what point of its length of about 480 feet the mischief began it is impossible now to ascertain. The position of the fallen roof would appear to indicate that it commenced about 80 feet from the west end, but the evidence of some of the witnesses rather points to the fall having commenced at the east end.

The columns were all broken in two places, the two points of fracture being in each column almost identical, viz., near the bottom at the junction of the plain part of the column with the ornamental moulding, and near the top at the junction of the cap with the part to which the roof cantilevers were attached, or four feet from the bottom and three feet from the top. The thickness of metal was intended to have been uniformly half an inch, and it must have been either from a deficiency in this thickness, or from a flaw in the casting, that the force of the wind was able to break a column thus weakened. The evidence of the witnesses does not lead to the impression that they had felt the force of the wind very excessive when the roof fell, and as they were all near the west end of the platform at the time, it rather seems to indicate that a gust of wind with a force considerably in excess of that recorded at 2.15 p.m., as 7·9 lbs. to the square foot at Coaling Point, some 1,400 yards distant, must have brought a heavy pressure to bear upon a comparatively weak column and fractured it. Theoretically these columns should have been able to sustain a far greater pressure than they were ever likely to have been exposed to.

In renewing the roof the joint Companies intend to use wrought-iron or steel supports instead of cast-iron columns, and to close in the space (which has been hitherto open) between the valance and the parapet at the south side of the island platform. With these improvements there ought to be no reason to apprehend the recurrence of any such accident as the present one.

In structures of this kind, where exposed to the force of the wind, it is desirable that the end columns and some intermediate ones should either be made stronger than the others, or clustered.

I have, &c.,
C. S. Hutchinson,
Major-General, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

Printed copies of the above Report were sent to the Joint Companies on the 16th February 1894.

MANCHESTER, SOUTH JUNCTION, AND ALTRINCHAM RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
29th January 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, that, in compliance with the instructions contained in your Minute of the 28th ultimo, I have inspected the public road level-crossing near Altrincham station, on the Manchester, South Junction, and Altrincham Railway, and held an enquiry with reference to a recent accident at that crossing, and to the desirability of substituting a bridge for the crossing.

The inspection and enquiry were attended by representatives of the Cheshire County Council and of the Local Board of Altrincham, and by the manager of the railway which is owned jointly by the London and North-Western and by the Manchester, Sheffield, and Lincolnshire Railway Companies.

The level crossing in question is on the high road between Stockport and Warrington, and crosses the railway, which is here a double line, at an angle of about 60°. It is about 155 yards on the Manchester side of the up end of the platforms at Altrincham station, and being near the centre of a large population is much used both by vehicles and foot-passengers.

The level-crossing was authorised as that of a turnpike road by the Manchester, South Junction, and Altrincham Railway Act, 1845 (8 & 9 Vict. c. 111, s. 36),

with the proviso "that the trustees of the said road or any five or more of them" consented thereto, and this it must be presumed they did.

The Railways Clauses Consolidation Act, 1845, is incorporated with the special Act, and by section 48 of the former Act it is provided that "where the railway crosses "any turnpike road on a level adjoining to a station, all trains on the railway shall "be made to slacken their speed before arriving at such turnpike road, and shall not "cross the same at any greater rate of speed than four miles an hour; and the "Company shall be subject to all such rules and regulations with regard to such "crossing as may from time to time be made by the Board of Trade."

As the crossing is within a short distance of Altrincham passenger station, and is situated between it and a goods yard and engine shed, it may fairly be held to be subject to the above quoted provisions of section 48 of the Act of 1845.

The crossing is provided with proper gates fencing alternately the road and railway; these gates are worked by a gate-wheel in a signal-cabin close to them, and are properly interlocked with signals, so that they cannot be opened to allow of vehicles, &c. crossing the railway unless the signals are at danger, nor can trains or engines be allowed to pass in either direction unless the gates are locked across the road. To facilitate the passage of pedestrians there are wickets controlled by the signalman, but not interlocked with the signals, and there is also a footbridge (approached by steps on each side), which is not a convenient one, is apparently not much used, and is kept in a dirty state.

There have been no recent statistics taken with reference to the use of the crossing by foot-passengers or vehicular traffic, but in December 1871, and in April 1874, the Altrincham Local Board had the crossing watched and a return prepared for six week days in each of these months, between the hours of 6 a.m. and 12 midnight, with the following results:—

	Year.	Least No. in a Day.	Greatest No. in a Day.	Total in Week.
Foot passengers	1871	2,625	4,460	19,395
"	1874	2,785	4,657	24,467

In addition to these numbers it appears that in 1874 (between which date and 1871 it is probable that a footbridge had been erected), a minimum daily number of 123, and a maximum daily number of 293, and a total weekly number of 1,287 foot-passengers crossed by the footbridge.

As regards vehicular traffic, &c. the figures are as follows:—

	Year.	Least in one Day.	Greatest in one Day.	Total in six Days.
Vehicles drawn by horses	1871	238	314	1,744
	1874	273	334	1,844
Hand carts and barrows	1871	Not recorded separately.		
	1874	66	91	458
Saddle-horses, cows, sheep, pigs, and asses	1871	35	147	405
	1874	24	191	408
		Least Time in one Day.	Greatest Time in one Day.	Total Time in six Days.
		H. M.	H. M.	H. M.
Gates closed across the road	1871	5 8	6 15	33 31
	1874	5 58	6 31	37 36
		Least No. in one Day.	Greatest No. in one Day.	No. in six Days.
Foot-passengers waiting while gates were closed	1871	14	110	392
	1874	54	160	636
Vehicles waiting while gates were closed	1871	31	88	435
	1874	75	124	578

BIBL. LONDON

As the population of Altrincham in 1871 was 8,478 and is stated to be now about 13,000, there is no doubt that the numbers given above would show a considerable increase.

The number of trains &c. passing over the crossing during the weeks in 1871 and 1874 when the statistics were taken, was not recorded, but for the six days ending the 6th January 1894 they were as follows, between the hours of 6 a.m. and 12 midnight.

	In one Day.	In one Hour.
Least number - - - - -	152	4
Greatest number - - - - -	172	15
Total in six days - - - -	995	—

The above statistics as to the use of the crossing by traffic of all descriptions taken in conjunction with the number of trains and engines passing over it, the latter amounting to a maximum of 15 per hour (attained four times during the week), and an average of nine per hour, certainly point to the very urgent necessity for the abolition of the level crossing. This was contemplated by the companies when one of them recently promoted a Bill in Parliament for (among other things) duplicating the lines through Altrincham. This part of the Bill, however, did not pass into law, and has not since been revived.

The plan as then proposed involved alterations in six roads and streets, all converging on or close to the crossing, at an estimated cost, I understand of some 20,000*l.*, and there is no doubt but that any reasonable scheme for the abolition of the level crossing, must, in consequence of the interference with property and the works necessary in connection with road diversions, be of a costly character.

As there is no statutory power to compel the companies to substitute a bridge for the level crossing, but as they have shown by the Bill recently promoted by one of them a desire to effect this substitution, and as there is a strong feeling, as expressed at the enquiry, both on the part of the Cheshire County Council and of the Local Board of Altrincham to have the level crossing abolished, it seems to me a case in which the work should be accomplished by combined action on the part of the Road and Local Authorities, and of the Railway Companies.

Failing any arrangement being arrived at on the lines above indicated, relief and complete safety from danger, so far as foot-passengers, hand-carts, bicycles, tricycles, and perambulators, are concerned, might be obtained at far less cost than the total abolition of the crossing by the construction of a commodious subway approached by ramps, in place of the present inconvenient foot-bridge of which comparatively little use is made by foot-passengers, and which is of course not available for perambulators, bicycles and tricycles, or hand-carts.

As regards the recent accident which led to the present enquiry, it was due to a misunderstanding between the driver and guard of a ballast-engine and van, and to negligence on the part of the driver and fireman. The train had arrived on the down line at about 5.15 p.m. on the 1st ult.; after the van had been disposed of in a siding close to the gates, for doing which the gates had to be closed across the road, the engine which had stopped 40 or 50 yards from the gates had to come forward to the crossing in order to set back into a siding, but owing to some mismanagement of the vacuum-brake with which the engine and tender were fitted, the driver was unable to start until he had got off the engine and released the tender-brake blocks with the help of a hammer. He then, he says, was told by the ballast guard (which the latter denies) to be sharp and get out of the way, whereupon he jumped on to the engine and gave it steam without either he or his fireman noticing that the level crossing gates, upon which a red lamp was burning, were across the line, and only realising that they were so upon hearing whistling and shouting when within about 20 yards of them, too late to avoid striking them, though every available means was used to stop.

The signalman having been informed by the ballast guard of the detention of the engine opened the level crossing gates to allow of some carts, which were waiting, to cross the railway, and had only just done so when he saw the engine approaching the gates. He first shouted to some people who were crossing to get out of the way, and then did what he could to attract the driver's notice, but the engine did not stop till it had run through both gates across the down line; a fragment of one of these gates must have struck a woman who was wheeling a perambulator over the crossing and had just cleared the down line before the engine struck the gates. The driver, fireman,

and guard were about completing their day's work, the two former of 11 hours each, and the latter of 10½ hours, when the accident happened.

It is stated by the manager of the railway that the present is the first case of personal injury sustained at the crossing during the 24 years he has been manager.

I have, &c.,

C. S. Hutchinson,
Major-General, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

Printed copies of the above Report were sent to the Joint Companies on the 22nd February 1894.

MIDLAND RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
30th December 1893.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 18th inst., the result of my enquiry into the circumstances attending a fatal accident which occurred on the 12th inst., near Ynisygeinon junction on the Swansea Vale section of the Midland Railway.

In this case, as the 5 p.m. passenger train from Brynamman to Swansea was passing a point about 230 yards on the Swansea side of the junction signal-cabin, at about 5.30 p.m., the line was suddenly covered by a mass of earth sliding down from the slope on the left side of the railway, and the two rear carriages were thrown off the rails, the rear carriage, a bogie brake-carriage, being upset on to the wall of an old mine shaft on the right side of the line.

The guard of the train, who was riding in the brake-compartment of this carriage, was fatally injured by some heavy luggage falling upon him, and has since died; and five passengers—two of whom were servants of the Company—were injured.

The permanent-way was not damaged, but there was considerable damage to the rolling-stock, for particulars of which see Appendix.

The engine, which ran ahead for about 20 yards with the two leading vehicles attached, was not damaged.

Description.

The Swansea Vale line, which was originally constructed over 40 years ago, was taken over by the Midland Railway Company in 1876, and at Ynisygeinon it is joined by the Neath and Brecon line, over which the Midland trains from Hereford run. The line at the point where the accident occurred is single, upon a very easy curve, and a gradient of 1 in 120 falling towards Swansea, and it runs southwards along the foot of a steep hillside, the slope of which on the left side of the line is very nearly at an angle of 45°, the River Tawe running parallel to the railway on the right side, about 66 feet distant from it, and at a level of about 25 feet below the level of the rails.

The formation of the line has been slightly cut out of the side of the hill, and is supported on the river side by a low bank and retaining wall, at the foot of which there is an old mine shaft protected by a dwarf wall, on which the rear carriage, after the accident, was lying.

There is an open dry stone drain running down the hillside for a distance of about 60 feet, and into this drain, at the top of it, there run three small watercourses which have little or no water in them except in wet weather.

The landslip which caused the accident was from a point near the top of the drain close on the Swansea side of it, and immediately below the nearest watercourse to Swansea of the three mentioned, which watercourse issues from some old quarries.

The Midland Company's boundary fence is about 40 feet higher up the hill than the landslip, which covered a surface of about 40 feet by 30 feet, and involved the fall of about 70 tons of earth, roots, and stones.

There has been no recent slip at or near this point, but some 115 yards nearer to Swansea there are traces of an old slip which is stated to have occurred between 20 and 30 years ago, and down which in wet and frosty weather there are still occasional small downfalls of loose stones.

The gangers and permanent-way men have orders to watch this and other similar places on the hillside during the continuance of heavy rain, and after hard frosts.

Evidence.

Arthur Hall said: I have been in the Midland Company's service 14 years; 12½ years signalman, and about four years at Ynisygeinon junction. On December 12th I came on duty at 6 a.m., to remain until 6 p.m. On December 11th I came on duty at 6 a.m., and left at 6 p.m. On December 12th, the 5 p.m. passenger train from Brynamman was signalled from Ystalyfera to Ynisygeinon junction, "Is line clear," at 5.12 p.m., and I at that time gave permission to Ystalyfera for a tablet to be withdrawn. I received the "Train entering section" signal at 5.24, and at this time Ynisygeinon sidings gave me permission to withdraw a tablet. I withdrew one, and the train passed at 5.28 p.m. I exchanged the tablet with, I believe, the fireman in the usual way, the speed of the train at the time being, I estimate, from 10 to 15 miles an hour. I returned to the signal-box, and placed the Ystalyfera tablet in the instrument. As I was giving the last bell signal I looked after the train, and had just left the tablet instrument, and placed my hand on the lever of the down starting-signal, when I saw the tail lights of the train lift up. I then felt the signal-wires move, and heard a crash. I felt sure that an accident to the train had taken place, and that some persons would be injured. I at once telephoned to Ystalyfera for the station-master to come to the junction, and to send a doctor. I also telephoned to Ynisygeinon sidings, saying I believed the passenger train was off the line and on its side. I then went to the place and found the rear vehicle on its side. I saw the driver and we looked in the guard's compartment, and saw guard William Meredith in a sitting position with some boxes upon him. I told the driver I would go back to the junction and urge Ystalyfera to send a doctor. I returned to my box, and shortly afterwards the station-master arrived on foot. Doctor Thomas arrived on an engine from Ystalyfera at 6.5 p.m. I was relieved by signalman Guerrier at 6 p.m., but I remained for some time rendering assistance. A gang of platelayers had been at work during the day filling in ballast near the junction points. At 5.5 p.m. I heard someone outside my box, and I called out to him. I then found that it was platelayer Thomas Webb. I had a conversation with him, and he said all was right and that he was going home. All signals were lowered for the passenger train to pass the junction. During the four years I have been at the junction, I can remember only one other slip, and that was on the Neath and Brecon line outside the home-signal. The line on that occasion was blocked. There were, I believe, about 40 tons of rock which fell after the last train had passed on a Sunday morning, and the line was cleared during Sunday. The 12th December was a very wet, stormy day, but it was clearer in the evening. There are 16 working levers in the signal-cabin and about 50 trains pass during the day. I did not know that Webb had been left to watch the line, until he spoke to me on his way home. The last passenger train is due to pass at 7.12 p.m.

Thomas Lewis said: I have been in the railway service 42 years, 36 years a driver, and in the service of the Midland Railway Company about 20 years. On December 12th I came on duty at Gurnos junction at 8 a.m. to work passenger trains between Brynamman and Ynisygeinon junction and Swansea, and perform certain shunting work between trains, to finish duty at 7.50 p.m. On December 11th I came on duty at 8 a.m. and left at 7.50 p.m. On leaving Brynamman with the 5 p.m. passenger train, it consisted of six wheel-coupled engine No. 1120, with the chimney in the rear, and four, equal to five, passenger vehicles in the following order from the engine; four-wheeled bogie third-class brake-carriage, six-wheeled third-class brake-carriage, six-wheeled third-class carriage, and four-wheeled bogie composite brake carriage in the rear. The guard's compartment was at the rear end of the last carriage, and guard William Meredith was travelling in this compartment. No vehicle was attached or detached after leaving Brynamman. All the wheels of the engine were fitted with the steam brake, and all the carriages with the automatic vacuum-brake, the steam-brake and the automatic vacuum-brake being worked with one handle from the foot-plate of the engine. The continuous brake was in good working order, and the train was brought to a stand by its use at the Gwys and the Ystalyfera stations. We left Brynamman at 5 p.m. Nothing unusual took place between Brynamman and Ynisygeinon junction, where the fireman exchanged the tablets with the signalman, the speed of the train being about 15 miles an hour. All signals at the junction were off for my train to proceed when I first sighted them, and remained off. After the tablets were exchanged I released my brake and applied steam. Shortly afterwards, when the speed was perhaps about 25 miles an hour, I felt a jerk and the brake was applied automatically, the engine being quickly brought to a stand. I shut off steam, and told my fireman to go back. I placed the engine out of gear, applied the hand-brake, and then looked round the engine to ascertain, if possible, the cause of the stoppage. I could find nothing amiss, and then went back and found only two carriages on the rails attached to the engine. The third carriage I found off the rails standing on its wheels across the rails, and the rear carriage was on the river side of the railway on its side, the wheels being towards the railway. The Swansea end of this carriage was foul of the line, but the Brynamman end was clear of the railway. I found persons leaving the rear carriage, and then had search made for the guard, who was taken from his compartment through the window on the lower side of the carriage, there being a space between the window and the surface of the ground at this point. Doctor Thomas of Ystalyfera arrived shortly after the guard had been removed, and an engine and a carriage were obtained as soon as possible, and the guard (Meredith) was conveyed to his home at Ystalyfera by the doctor's instructions. A little girl told me, on enquiry, that she had received a blow on her head. Some other passengers said they were shaken. Some of the Midland Company's servants were in the carriage that fell on its side, and some of them appeared to be shaken. The slip must have taken place after my engine had passed as there were no dirt marks on the engine wheels, or on the wheels of the two carriages in front, and I neither saw nor heard anything wrong when passing. There was an interval of about 20 yards between the two portions of the train after we came to a stand. It had been a terrible wet day up to about 3 p.m., there was a great deal of water coming down the drains, and the river was very high. I have known the line since I was a boy. There was once a considerable slip some distance on the Swansea side of the present slip. That must have been some 30 years ago; at any rate it was before the Midland Railway Company had the railway. This is the only slip of any consequence that I can remember. I had passed Ynisygeinon with an up train at about half past three p.m. on the 12 inst., and I then saw no signs whatever of any slipping of the hillside. The drain was clear, and there was a lot of water coming down. The platelayers were working about there all day.

Benjamin Hawkins said: I am a fireman, and have been eight years in the Midland Railway Company's service, about five years fireman, and at Gurnos about 3½ years. On December 12th I came on duty to act as fireman with driver Lewis, and to remain on duty the same hours. I was with him also on December 11th. I have heard the statement made by Lewis. It is correct, so far as I know, and I have nothing to add.

Samuel Collomore said: I am ganger of platelayers, and have been 10 years in the service. My length extends from the 11th mile post near the water tank on the Pontardawe side of Ynisygeinon junction to the 13th mile post near Gurnos junction, and I have been nearly three years on this length. On December 12th, I came on duty at 7 a.m. to remain until 5 p.m. I was on duty during the same hours on December 11th. On December 12th, from about 7.30 a.m. until about 3 p.m., myself and four men were at work near the place where the accident occurred repairing the road. The day was wet, and about 2 p.m. I noticed more water than usual coming down an open drain. I went up to the mountain side and examined the drain, and found that the water was taking its proper course. At about 3 p.m. I took with me three of my men to examine the lengths to Gurnos. This special examination was in consequence of the heavy rain, as I was anxious that there should be no stoppages in the drains and culverts. I met platelayer Thomas Webb at the work near the junction, and told him to examine an old slip near the water tank, and if he found any signs of movement he was to telegraph to me at Gurnos. At about 4 p.m. I was called to Ynisygeinon junction, and found two coaches of the 5 p.m. train ex Brynamman off the rails, and the last coach was lying on its side across the top of the wall of an old disused coal pit. The pit is walled up and the coach was on the top of the wall. I found a lot of rubbish on the road that had fallen from the slope. I should think there were eight or ten waggon loads, or about 70 tons; it consisted of dirt, stones, and roots of trees. I think the slip caused the last coach to go over on its side; the couplings then broke between the last but one carriage and the front portion of the train. The engine and front portion of the train were on the rails and were not damaged. I have since examined the bank, but have been unable to ascertain the cause of the slip of earth. The old slip near the water-tank took place, I have been informed, about 30 years ago. The side drain I have spoken of comes straight down the hillside just on the junction side of the new slip. Part of the top of the drain which extended nearly up to the top of the slip, has been carried away. There are three small watercourses running down the hillside, all running into the top of the drain. It is only in wet weather that there is any water in these watercourses. When I examined the drain at about 2 p.m. on the 12th instant, the water was running nicely down it and down the watercourse above and there was no sign whatever of any movement in the hillside alongside the drain, and the hillside seemed no wetter than is usual in such weather. After the accident I did not notice that any water to speak of had come down with the rubbish. It was damp, but did not seem to be saturated with water. Since I have been here there has been no slip in the hillside, merely a few loose stones coming down in the old slip usually after a frost. It was this old slip I left Webb to look after, telling him to come away at his own time if all was right. I had no anxiety about any other place. There is a hollow just above the watercourse nearest to Swansea. I have been told that many years ago the Swansea Vale Company carried some stone there. There has been no change made since my time. There is an order from the engineer that this part of the line is to be watched during heavy rains, so long as the gangers think it necessary that it should be done. I did not consider that it was necessary to continue to watch the line on the 12th instant if everything seemed right at the usual time for leaving work, as the very heavy rain had ceased.

Thomas Webb said: I have been 2½ years in the service of the Midland Railway Company as platelayer, and with ganger Collomore two months. On December 12th I came on duty at 7 a.m., and left duty at 5 p.m. I had been off duty during the eight previous days taking a holiday. When I left duty at 5 p.m. on the 12th instant the state of affairs near Ynisygeinon junction was the same as when Collomore left at 3 p.m. No movement of earth had taken place. Collomore told me to go on levelling up the ballast, and to keep an eye on the old slip; coming away at 5 p.m. if all was then right. I have only known the place for about two years.

Thomas Martin said: I am permanent-way inspector, and have been over 40 years in the service of the Midland Railway Company, and over 19 years in the district. There have been, in that period, a few trivial slips in the hillside nearer to Swansea than Ynisygeinon junction, but no movement at all near this junction. I pass over this portion of the line every day, and I always examine the hill-side after heavy rain or frost. About a month before the accident I examined the slopes and the drain. I saw no movement. It was not wet at that time. On the 12th instant it was raining for about nine hours, and there was the heaviest flood on the river that there has been for 12 months. I was ill on the 12th instant, and did not go to the scene of the accident. My sub-inspector was a passenger in the train. I cannot say when the hole above the slip was made, or whether it was due to an old slip. It was there when I came to the district, and has not altered since. The old slip near the water-tank was also there, and in the same condition, but occasionally, after frost or heavy rain, some few loose stones come down this slip. The ganger's orders are this section and adjoining sections of the line after heavy wet or frost, to watch for stones. When the rain continues through the day and night, the watch should be kept up through the night. On this occasion, as the rain ceased at about 3 p.m. or 3.30 p.m., and the slopes appeared to be in a safe condition, the ganger was not called upon to go on watching. I think that water must have accumulated below the surface at the foot of the small watercourse nearest to Swansea. No water comes down this except in heavy rains. I had no anxiety about that part of the hillside.

William Witney said: I am sub-inspector of permanent-way, and have been nearly 20 years in the service of the Midland Railway Company. On the 12th instant I was riding in the train to which the accident happened, in the next compartment to the guard. I noticed nothing unusual in the speed at Ynisygeinon junction, but it was quite slow. I remember that the carriage suddenly lifted, and was at once upset. I was slightly injured, but got out at once. The carriage was on its side, hanging over the wall of an old mine shaft full of water. I ran back to the signal cabin to send for assistance. I had passed the junction three times that day, and I got out and examined the hillside at about 4.20 p.m. There was nothing then to cause any anxiety. A good deal of water was coming down, but the drain was clear and in good order. There had been about nine hours' rain, but it had stopped in the afternoon. I think that it had commenced to rain again slightly before the accident. I have been for 10 or 12 years in this district: and there have been no slips in the hillside during that time. At the time of my examination I did not consider that, as the rain had ceased, there was any need for the ganger to continue to have the line watched. There were six persons riding in my compartment, but I did not know how many passengers there were in the train. I did not see anyone injured to speak of, except the guard. I have examined the slip, and think that it was due to an accumulation of water under the surface.

Conclusion.

This sad accident, which caused the death of a very deserving servant of the Midland Railway Company, and which involved great risk to a number of passengers, was due to the sudden slip of a mass of earth, which must have fallen at the very moment that the train was passing, as it did not reach the line until the engine and the two leading carriages had passed, and would have missed the train altogether had it occurred two or three seconds later. It is evident that the cause of the landslip was the very heavy rainfall, which had lasted for nearly nine hours, and during which there was so much water running down the hillside that the southernmost of the three small watercourses overflowed, and the water, instead of discharging entirely into the drain, ran into a small cup-shaped depression, in which the earth became so saturated that it eventually slipped down the hillside.

The ganger had left a man to watch, as long as the rain lasted, at an old slip about 115 yards nearer to Swansea, but he had no anxiety about this part of the slope, and he had carefully examined it during the day, while it had also been inspected only about 1¼ hours previously by the sub-inspector of permanent-way for the district.

Under the circumstances I do not think that any person can be blamed, or that any carelessness was shown by the ganger, who was, under the regulations, justified in telling the man whom he had set to watch to come away at the usual hour if the rain had ceased, and if everything appeared to be in good order, while, owing to the evident suddenness of the slip, I do not think that, even if there had been a man watching at this exact spot, the accident could have been averted. All the servants of the Company concerned were most prompt in their action after the occurrence of the accident, the signalman in the junction signal-cabin telephoning at once for assistance, even before he knew quite what had happened, so that a doctor was brought to the scene of the accident from a distance of two miles in less than half an hour, the station-master from Ystalyfera having already arrived on foot.

The whole of the hillside at this place is on a very steep slope, and is composed of material which is liable to become very slippery in wet weather, and the Company should take warning by what has occurred, and lose no time in making a critical examination of the slopes, trimming them and thoroughly draining them where necessary.

It is especially desirable that the three small watercourses referred to should be attended to so that all the water coming down them may flow into the dry stone drain, and not be liable to overflow down the hillside.

I have, &c.,

F. A. Marindin,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Particulars of Damage.

Third-class brake No. 71.—Two side-chain hooks bent.

Third-class carriage No. 1022.—Two side-chains, one bar-shackle, one drawbar-plate, and one door-light broken; one buffer-rod, one drawbar, one draw-bar-shackle, one screw, and three step-irons bent.

Bogie composite brake No. 176.—Body—eight standing pillars, eight intermediate pillars, four doors, 11 quarter-panels, eight quarter-lights, five door-lights and frames, six step-irons, two foot-boards, and seat, and letter-rack in brake compartment broken; two bottom side-bars, inside lining and cornice damaged; two commode handles, one door-handle, one door-bolt and draw-bar bent.

Bogie-trucks.—Three axle-boxes, 12 step-irons, three chair-loops, four step-boards and bolster-pin cotter broken.

Frame.—Axle-guards, step-irons, and brake-work bent.

Printed copies of the above Report were sent to the Company on the 15th January 1894.

NORTH BRITISH RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
14th November 1893.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 10th ultimo, the result of my enquiry into the causes of the collision which occurred on the 3rd ultimo at Inverkeithing south junction, close to Inverkeithing station, on the main line from Edinburgh to Aberdeen on the North British Railway.

In this case, the 4.30 a.m. express passenger train from Edinburgh for Aberdeen, due to pass Inverkeithing south junction at about 4.50 a.m., but running about four minutes late, ran past the junction down home-signal which was danger against it, and about 35 yards beyond that signal came into collision with the fourth waggon from the engine of the 1 a.m. goods train from Grangemouth, *viâ* Dalmeny and Forth Bridge for Thornton, which train was being shunted on to the old Queensferry line out of the way of the express train when it was run into by it.

Only one passenger was injured. None of the Company's servants sustained injury.

The express train consisted of an eight-wheeled, four wheels coupled, engine, with a four-wheeled leading bogie, and a six-wheeled tender, running chimney in front, six six-wheeled vehicles and a horse-box (next but one to the tender), the first and last being brake-vans with a guard in each, the train (with the exception of the horse-box which had brake-pipes only), being fully equipped with the Westinghouse brake. In it the engine, tender, and six front vehicles were all damaged.

The bogie-wheels of the engine were lifted up on the right-hand side, and the leading wheels of the front brake-van were off the rails.

The goods train consisted of engine and tender, 19 loaded and five empty waggons and a brake-van. In it the tender and four waggons next it were damaged (one of them being destroyed) and knocked off the rails.

A list of damage is given in an Appendix.

Description.

At Inverkeithing south junction, the new line from the Forth Bridge to the north joins the old Queensferry line with a regular double junction, the trailing points being on the down line. The junction is approached from the Forth Bridge on a falling gradient of 1 in 70 (with a level portion 146 yards long two-thirds of the way down) about $1\frac{3}{4}$ miles in length, which terminates about 100 yards from the junction points, whence the line becomes nearly level. Near the commencement of this falling gradient there is a tunnel 572 yards long, and near the bottom of it another tunnel 410 yards long, the lower mouth of the latter being only about 295 yards from the junction.

The main line junction down home-signal is about 35 yards from the fouling point, and is visible from the mouth of the lower tunnel, *i.e.*, for about 230 yards, and the distant-signal, visible for a long distance, is about 685 yards from the home-signal.

The signal-cabin is between the new and old lines, and about 60 yards on the south side of the main line down home-signal post.

The line is worked on the absolute block system, the next block stations on the main line north and south being Inverkeithing Central and Queensferry North, about 510 yards and $1\frac{3}{4}$ miles distant respectively.

Evidence.

1. *David Todd*, signalman, six years' service, $4\frac{1}{2}$ years signalman.—I have been employed about 16 months at Inverkeithing south junction, where I came on duty at 6 p.m. on 2nd October for 12 hours. I am alone in the cabin. The next block station south is North Queensferry, about $1\frac{3}{4}$ mile, I believe, distant, and Inverkeithing central is the next to the north, about 500 yards distant. The 1 a.m. goods train from Grangemouth arrived at 4.45 a.m. about 10 minutes late. It had two waggons to leave, and three to lift. The shunting was completed, and the train was ready to start at 4.50 a.m. Inverkeithing central cabin had accepted the goods train at 4.46 a.m. and at 4.50 a.m. the train moved away, as I thought, on its journey, but it stopped with the engine at the water column, and with the tail of the train about two waggons north of the junction trailing-points. When the train began to move away the tail of the train was about 30 yards north of the tunnel mouth. I knew from Dalmeny that the 4.30 a.m. express was about four minutes late leaving Edinburgh, which would make its time for passing about 4.54 a.m. I got the "Be ready" for the express from Queensferry north at 4.49 a.m. before the goods train had begun to move.

I did not accept it then, but I did so at 4.50 a.m., after the goods train had passed the home-signal. The express train was given "On line" at 4.51 a.m., and I accepted the signal, the goods train having then stopped at the water column, with the tail a short distance past the junction trailing-points, or about 100 yards outside the home-signal. My rule is not to give "Line clear" till the previous train is a quarter of a mile past the home-signal, and I disobeyed the rule under the belief that the goods train was proceeding on its journey, as it was not customary for it to stop for water, it not having done so since 9th August. Seeing that the engine wanted water I thought it better to set the train back on the Queensferry line than to send it forward, and I accordingly instructed one of the guards to call the driver back. He set back at once, but had come to a stand, by the guard having, I believe, stopped him, when the express was at the south end of the tunnel, and the train did not move again before the collision took place at 4.53 a.m., the engine of the express striking about the third waggon from the engine, knocking the front waggons aside, and then striking the tender of the goods train. I think the speed of the express was about 20 miles an hour when the engine passed the cabin. I had never taken off my signals for the express. I tried to get the goods train back by shouting and whistling after the driver had stopped. The guard had, I understand, stopped him because there were some waggons standing on the old Queensferry line, but these might have been pushed back. If the goods train had not thus stopped it would have cleared the junction in plenty of time. I was on duty the night before, and then the engine of the goods train had not taken water.

2. *Robert Barclay*, driver; 18 years' service, 12 years driver.—On 3rd October I was driver of the 1 a.m. goods train from Grangemouth for Thornton *viâ* Dalmeny. I had come on duty at 11.45 p.m. on the 2nd of October for 12 hours. I arrived at Inverkeithing at 4.52 a.m., 17 minutes late by my watch, which was right by the station clock, and I stopped with the engine opposite to the signal-cabin. I had one waggon next the engine to leave, and I took it to the goods shed on the old Queensferry line, and then returned to my train, the tail of which was a short distance outside the tunnel. I got back to the train about 4.54 a.m., and then went ahead and stopped at the water column, wanting water; the next place for water was at Dunfermline lower station. I might have gone that length, but Inverkeithing is the usual place, and I had taken water there the morning before with the same train, the tail of the train being then a short distance clear of the junction trailing points. I had only just come to a stand when I was called back by the signalman and the first guard. I accordingly set back at once, and at first with a clear signal, but on getting near the points I got a caution signal and set back more slowly, and on seeing the lights of the 4.30 a.m. train, about 40 yards off, I shut off steam, and had come to a stand when the collision occurred, the engine of the express striking the fourth waggon from the engine, throwing it and the third in front of it off the rails, and striking my tender, forcing its leading wheels off the rails, and driving the tender and engine back about 20 yards. One waggon was destroyed, and three others damaged. The collision occurred at 4.56 a.m. Neither I nor the fireman was hurt. We both jumped into the 6-ft. space just before the collision. A little rain had fallen in the morning.

3. *John Robertson*, fireman; 3¾ years' service, one year fireman.—I had been with Barclay six days when the collision occurred, and my hours and his were the same on the 2nd and 3rd October. I agree with the driver's evidence except that I think that we were still in backward motion of about three miles an hour when the collision occurred, and that the trailing wheels as well as the leading wheels of the tender were off the rails. I jumped off on the platform when the train was still in motion. We had taken water at Inverkeithing the morning before that on which the collision occurred.

4. *Duncan Little*, goods guard; 4½ years' service, one year goods guard.—I came on duty at 12.30 (midnight) on the 3rd October to work till 10.45 a.m. I was head guard of the 1 a.m. goods train from Grangemouth for Thornton on the 3rd instant. My place was in the rear van. We arrived at Inverkeithing at 4.52 a.m., 17 minutes late, and stopped with the engine a short distance past the signal-cabin. We had one waggon to leave and three to lift. We only left the one waggon, as the signalman gave us a signal for the engine to rejoin the train. We then went on, I not being aware the driver was going to stop for water; he however did so, and immediately the signalman gave a signal to set back, which signal I passed on to the driver from the van. I gave a green lamp, and never altered this. I suppose the driver must have slacked on my van bumping against 10 waggons which were standing along the platform on the old line; they were slightly moved back, sprags being in their wheels. About the same time my van touched the waggons the collision occurred. I saw the express pass, but I cannot estimate its speed. I thought we were going right away when the engine had rejoined the train. I had an underguard with me also in the van. I do not know whether he gave any signals. There were 24 waggons (5 empty and 19 loaded), and the brake van. Four waggons were knocked off the rails and damaged.

5. *John Kelly*, goods guard; two years' service, guard three weeks.—My hours were the same as Little's on the 3rd of October, when I was under guard of the 1 a.m. goods train from Grangemouth for Thornton. I agree with Little's evidence. I think the train was nearly stopped on the collision occurring. We had taken water at Inverkeithing the previous morning.

6. *Robert Nicholson*, driver; 42 years' service, 39 years driver.—I commenced work on October 2 at 5.50 p.m. to remain usually till 10.15 p.m., but on this occasion I was not relieved on account of the holidays till 1 a.m., and had to recommence at 3 a.m. to sign off at 7.40 a.m. I had not lain down between 1 and 3, but had been getting a meal, &c. I joined the 4.30 a.m. train at Waverley to run to Aberdeen. My engine was No. 37, an eight-wheeled engine with a four-wheeled leading bogie and four coupled wheels, and a six-wheeled tender, the train consisting of six six-wheeled vehicles and a horse-box, with a brake-van front and rear with a guard in each. The brake power was the Westinghouse brake applying to the four coupled wheels of the engine, the tender wheels, and four wheels of each vehicle, except the horse-box. My place was on the left-hand side of the engine. My fireman was alone with me on the engine when we left Waverley at 4.34 a.m., four minutes late. We were not stopped anywhere by signal and the first stop was to be at Dundee. I had tried the brake at Corstorphine where the speed is to be reduced to 20 miles, and at Dalmeny south, where the speed is to be reduced to 10 miles on account of shale working, and the brake was working properly at both places, the pressure being 75 lbs. The first signal against me was the Inverkeithing south junction distant-signal which I saw at danger about 200 or 300 yards off, the speed being then about 30 to 40 miles an hour, steam having been shut off just after passing North Queensferry station. On sighting the distant-signal at danger I applied the Westinghouse-brake at once, reducing the pressure to about 50 lbs., but this produced no effect upon the speed, and after passing the distant-signal I put the brake fully on and opened both sand-boxes (delivering dry sand) on entering the second tunnel. The speed still continued without reduction till I reached the north end of the tunnel, and then seeing the home-signal at danger I reversed the

engine, but was not able to get steam against the engine before striking the waggons at a speed of hardly 20 miles an hour. I could not say whether the goods train was in motion when I struck it. On the engine striking the tender of the goods train it ran forward a very short distance. The wheels hardly left the rails, but the bogie wheels were lifted upon the right-hand side and the engine was buffer-locked with the tender of the goods engine. The only other wheels off the rails were the leading wheels of the van next the engine. I was not injured nor was the fireman. My engine was a good deal damaged and the tender slightly so. I could not say exactly the time of the collision, but I think it was about 4.55 a.m. The state of the rails was greasy owing in a measure to falling leaves. The wheels did not pick up when I had applied the brake at Corstorphine and Dalmeny. I generally apply the brake on entering the tunnel. I have never before been stopped at this junction. I had been laid up with bowel complaint for three weeks previously to the 2nd October.

7. *John McLean*, fireman; 10 years' service, seven years fireman.—I have been Nicholson's fireman about two years, and I was with him on the 3rd October, my hours being the same as his. My place is on the right side of the foot-plate. I agree generally with Nicholson's evidence, except that I think the brake *did* affect the speed when it was first applied. I never remember being previously stopped at the junction home-signal.

8. *James Gray*, guard; 21 years' service, 18 years guard.—I came on duty at 4.30 a.m. on the 3rd of October to remain till 11 a.m. I was head guard of the 4.30 a.m. train from Edinburgh for Aberdeen. It consisted of an East Coast brake van, Great Northern horse-box, Great Northern corridor third-class, East Coast composite, East Coast sleeping carriage, North British composite, North British brake-van, all having six wheels except the horse-box, which had only four wheels. We left five minutes late, I being in the rear van, and there being from 75 to 78 passengers. The brake pressure was 60 lbs. on starting. We were not stopped anywhere before the collision, but the brake was used for slowing the train at Corstorphine and Dalmeny. I do not know where steam was shut off. On approaching Inverkeithing south junction I saw the distant-signal at danger, 300 or 400 yards off, the speed being then about 40 miles an hour. I felt the brake applied when near the distant-signal, the speed being reduced, and it was applied a second time about the centre of the tunnel more forcibly than at first, the speed being still more reduced. I did not see the home-signal at danger on account of steam, but I felt the collision occur just before which the speed had been 16 or 18 miles an hour. I did not apply my hand-brake, not having heard any brake-whistle. The two leading wheels of the front van were knocked off the rails. Some foot-boards were damaged. I saw no one complaining of injury. I believe the collision occurred at 4.53 a.m. I was not hurt. I have often run with this train, and never remember being stopped at the junction before. The morning was clear. I am under the impression that there had been no rain.

9. *George Henderson*, guard; 20 years' service, 15 years guard.—I commenced work on October 3rd at 4.30 a.m. to finish at 2 p.m. I was second guard of the 4.30 a.m. train from Edinburgh for Aberdeen. I was riding in the front van next the tender. I agree with Gray's evidence. On approaching Inverkeithing I felt the brake applied on entering the tunnel, and then near the north end, the first application had not much effect on the speed. I could not see the home-signal though I looked for it. The collision took me unawares and I was struck by a parcel post hamper, but was not much hurt. The collision occurred at 4.53 a.m. I applied the Westinghouse brake at the north end of the tunnel, but there was very little air left. I heard no complaints of injury. I did not ask the driver why he had not stopped. There was nothing I am aware of in the weather to make the rails greasy. I never remember being stopped previously with this train at the junction home-signal. I heard no brake-whistle. There had been no rain since 3.30 a.m. In my judgment the driver had passed the distant-signal at too great a speed.

10. *Adam Jack*, traffic inspector; 14 years' service, three years traffic inspector.—I joined the 4.30 a.m. train at Edinburgh on October 3rd to note its progress. I was in the fourth vehicle from the engine. I felt the brake applied slightly at Corstorphine and more strongly at Dalmeny. After passing North Queensferry the speed was I think about 45 miles an hour, and the first application of the brake that I felt was on entering the tunnel next Inverkeithing, the speed having slightly increased; the speed was thus reduced by about 10 miles an hour. Directly after leaving the tunnel there was a second application of the brake, which reduced the speed considerably, and the train ran uneasily till the collision occurred at a speed of 15 to 20 miles an hour. I did not feel it much. I asked the driver and he said that the brakes had not acted as well as he had expected. He appeared to be perfectly sober. I had not seen any of the signals. It is customary to use the brake for checking the train on the 1 in 70 gradient. Driver Mackintosh has frequently driven this express.

Conclusion.

This collision was immediately caused by the failure of Nicholson, the driver of the down express train, to stop at the Inverkeithing south junction down home-signal, which signal (as well as the down distant-signal) he admits to have been at danger against his train, and which he nevertheless passed at a high rate speed (from 15 to 20 miles an hour), his engine coming into collision some 35 yards beyond it with the third or fourth waggon from the engine of a goods train which was setting back through the junction points on to the old Queensferry line to get out of the way of the express train.

Nicholson states that he had shut off steam at the top of the incline of 1 in 70 and was approaching the distant-signal at a speed of from 30 to 40 miles an hour, and urges in excuse for his conduct that the Westinghouse brake, with which the whole of his train (with the exception of a horse-box) was fitted, did not act as well as he had expected, attributable he thinks to the greasy state of the rails from rain and leaves which had fallen on them; I think the real explanation of his conduct is to be found in the fact that he was approaching the junction under the full expectation that, never having on previous occasions been stopped at it, he would find the down home-signal

lowered when he came in sight of it on emerging from the tunnel about 230 yards from it, and that it was only then, on finding it at danger, that he made a serious attempt (the engine being then reversed as well as the brake applied) to stop at it, which the speed and falling gradient of 1 in 70 (continuing to within about 50 yards of the point of collision) prevented his doing. The brake had acted well in checking the speed of the train at two places between Edinburgh and Inverkeithing, and there is no reason to suppose that anything had afterwards gone wrong with it.

Nicholson is an experienced driver of 39 years' service. At the time of the collision he had been on duty for about 11 hours, viz., since 5.50 p.m. on October 2nd with an interval of two hours' rest between 1 a.m. and 3 a.m., and would have finished his work on the arrival of the train at Aberdeen where it was due at 7.35 a.m. These hours of duty were exceptional owing to a holiday, his ordinary day's work extending from 5.50 p.m. to 10.15 p.m., and from 3 a.m. to 7.40 a.m. It is only fair to add that Nicholson had been on the sick list for three weeks prior to the 2nd October, and that he was therefore probably not quite up to the mark.

No blame is, I think, to be attached to the other servants of the Company in charge of the express train. Traffic inspector Jack, who was travelling by the train (in the fourth vehicle from the engine) to take special note of its working, it being an important competitive train, thinks the speed was above 45 miles an hour on entering on the incline of 1 in 70, $1\frac{3}{4}$ miles from the junction, and that this speed had increased when he felt the first application of the brake on entering the tunnel next Inverkeithing, which diminished it by about 10 miles an hour, and that it was further considerably reduced by a second application of the brake upon leaving the tunnel, the collision occurring when the speed was from 15 to 20 miles an hour.

The servants of the Company in charge of the goods train were acting under the instructions of Todd, the junction signalman, and do not appear to deserve any blame. Their train was probably in slow motion backwards when the collision occurred.

Todd, the junction signalman, is much to be blamed for having given "Line Clear" for the goods train and accepted the "Be ready" signal for the express train from Queensferry north ($1\frac{3}{4}$ miles distant) after the goods train had just passed the home-signal under the expectation that it was going forward on its journey, instead of which the engine stopped at the water-column, when the tail of the train was about 100 yards outside the junction home-signal. He states that the rule is not to give "Line clear" until a train is a quarter of a mile past the home-signal, *i.e.*, beyond Inverkeithing central cabin (about 500 yards distant), and acknowledges that he disobeyed this rule on the present occasion, no doubt in his anxiety not to delay the express train and under the impression that the goods train was going forward on its journey and not requiring to take water previously. On finding that the goods train had stopped at 4.51 a.m. at which time the express was given "On line" from Queensferry north cabin, Todd committed, I think, an error of judgment in ordering the goods train to set back through the junction on to the old Queensferry line. He had already got the signal for it accepted from Inverkeithing central cabin (about 500 yards distant) and if he had sent it on there it could have been turned on to the Dunfermline line out of the way of the express and without the same risk of collision as was involved in setting the train back through the junction.

Todd has been six years in the service, $4\frac{1}{2}$ years as signalman, and has been employed 16 months at Inverkeithing south junction where he had come on duty at 6 p.m. on October 2nd for 12 hours, and had therefore been at work for nearly 11 hours when the collision occurred.

I have, &c.,

C. S. Hutchinson,
Major-General, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Rolling-Stock.

4.50 a.m. Express Train.

North British engine No. 37.—Front end of engine-frames twisted and bent; bogie centre, frame angle-irons, buffer-beam, buffers, front drag-box, drawhook, front flange of cylinders and three angle-irons on front of engine broken; platform plates bent and twisted; smoke-box front and side damaged; cylinder-lubricator and clack-box broken; funnel damaged; smoke-box hand-rail broken; bogie centre-springs and buffer-springs broken.

North British tender No. 37.—One axle-box, foot-step-hanger, and four buffer-studs broken.

East Coast Joint Stock sleeping carriage No. 185.—Step-board and hanger damaged; bottle-rack broken.

East Coast Joint Stock composite carriage No. 130.—Two step-boards and six step-hangers damaged.

East Coast Joint Stock passenger van No. 145.—Two end panels broken; end bar and framing damaged; buffer-rods, ascending-steps, and handle damaged; corner pillar and end quarter broken; two doors and two axle-boxes broken; one door damaged; one end quarter-panel broken; three step-hangers and two step-boards destroyed; two guard-plates damaged; projection damaged; gas-pipe broken; door-glass and frame broken.

Great Northern Railway third-class carriage No. 2,443.—Corner pillar, quarter and two door-panels broken; two step-boards, three door-panels, three door-hinges, and three commode-handles damaged; side mouldings broken.

Great Northern Railway horse-box No. 2,538.—Foot-board and step-hangers broken; corner post and side pillars damaged.

North British composite carriage No. 126.—Buffer-rod bent and buffer-casting broken.

1 *a.m. Goods Train.*

North British tender No. 244.—Tank damaged; buffers, buffer-beam, back hand-rail, two angle-irons, and two staple-knees broken; inside frames and angle-irons broken; drawhook and brake-hangers broken; frames bent; two axle-boxes and angle-iron of outside frame broken.

North British waggon No. 3,618.—Broken up.

North British waggon No. 18,106.—Buffing-spring broken and side damaged.

North British waggon No. 30,569.—One tram, four side standards, one spring-cup, two axle-boxes, four springs, and one axle broken; top rail guard-plates and side lever damaged.

North British waggon No. 48,854.—One tram, one top-side plank, two headstocks, one end pillar, one buffer-socket, one buffer-rod, four bearing-springs, brake-casting, two guard-plates, and four axle boxes broken; two guard-plates, one buffer-rod, one bearing spring, and sheet stretcher damaged; one wheel-tyre broken.

Printed copies of the above Report were sent to the Company on the 29th November.

NORTH-EASTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
5th December 1893.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 14th November, the result of my enquiry into the collision that occurred on the 6th November at Everingham station on the North-Eastern Railway.

In this case the 8.20 a.m. express train from Bridlington to Leeds, on passing Everingham came into collision with the balance-box of a travelling crane which was being used in an adjacent siding for loading timber into a railway truck.

It is satisfactory to note that no passengers or servants of the Company received any injury.

The train consisted of a four-wheels-coupled tender-engine and six six-wheeled vehicles, including a brake-van. It was fitted throughout with the Westinghouse automatic brake, working blocks on the coupled wheels of the engine, on the six wheels of the tender, and on four wheels on each coach.

The engine had a hole knocked through the smoke-box besides other damage, and five vehicles of the train received injuries to axle-boxes, footboards, &c. (For details *see* Appendix.)

The travelling crane was practically wrecked, having its ballast-box knocked to pieces and jib broken.

The permanent-way was not injured.

Description.

Everingham is a small roadside station, having up and down platforms, and a siding with a trailing connection on the up main line. The signal-cabin, from the windows of which a good view of the siding is obtained, is situated on the up side of the lines, and is close to the siding-points.

The travelling crane was standing in the siding about 39 yards from the cabin, and 78 yards inside the up home-signal. There is a good deal of timber traffic from this place, and the crane on the day in question was being used for loading some large trees into a railway truck which was standing in the siding immediately behind the crane. There was a second crane in the siding, but this was not in use and was in no way connected with the collision.

The station is approached from the direction of Bridlington by a slightly rising gradient.

The regulations regarding the transport and use of travelling cranes, which are embodied in the general rule book, are sufficiently explicit; and with a view to guard against collisions of the nature of that under consideration, the General Manager of the Company issued, in July last, a printed circular to station-masters and others, in which these regulations were repeated, and in which special attention was called to their importance. A copy of this circular, embodying the rules in question, is given in the Appendix to this report.

Evidence.

Michael Walker, station-master, states: I have been in the Company's service about 11 years, and I have been four years station-master at Everingham. Before that I was stationed at Everingham as porter-signalman for about one year and seven months. On the morning of the 6th November I came on duty at 7 a.m. I took charge of the signal-cabin from that hour till 9.30 a.m., and from 5.30 p.m. till about 8.20 p.m. There are usually two porter-signalmen stationed here, who take charge of the cabin in turns. But on the day in question the man who was at that time on duty was learning the duties of signalman, and for that reason he was not allowed to take charge of the cabin. From 9.30 a.m. till 5.30 p.m. porter-signalman E. Dobson took charge; he is a passed signalman. On the application of Mr. S. Margerison, I made arrangements for loading some timber and I applied for a travelling crane to be sent from York with timber loaders. The cranes arrived on the 3rd November, so far as I remember. The men arrived on the 4th idem and commenced loading. On the morning of the 6th November the men arrived again from York at about 8.7 a.m. There were a ganger and two men, and they commenced work as soon as they arrived. I was then in the signal-cabin. At 9.1 a.m. I received the "Be ready" for the down train due here at 9.8. I accepted it, and at 9.8 a.m. I received the "Train on line" signal from Holme. I passed the "Be ready" on to Shipton Lane and it was accepted, and I then told Sharpe to lower the signals. As soon as I had done this I left the cabin and came to the booking office to book passengers, leaving Sharpe (the new porter-signalman) in the cabin. The down train arrived here at 9.12 a.m. and as soon as it had left, I went back to the cabin. I found that during my absence Sharpe had accepted the "Be ready" and received the "On line" for the 9.5 a.m. up express from Market Weighton. After reaching the cabin I noticed that he had lowered the signals for the up express, and I then observed the up train approaching. It was then about 250 yards away. I then heard the driver whistling. That attracted my attention and I saw that the tail end of the crane was foul of the up line. I could do nothing under the circumstances to stop the train, for the engine would have been up to the home-signal before I could have put it on. The engine struck the tail-box of the crane, and ran about 120 yards before the train came to a stand. Steam was off at the time, and the brake was on. I saw the fire flying from the wheels. The timber loaders had started work after arrival of their own accord. I gave them no instructions. They were the same men who were here on the previous days. I gave them instructions three weeks previously, that when I or the signalman whistled or shouted from the signal-cabin they were to remove the crane into a proper position clear of the main line. I expect that I repeated the same instructions on the Friday or Saturday, the 3rd or 4th November, when they commenced work. I have a copy of the general manager's order, No. 62, dated 1st July 1893, which draws the attention of station-masters and others as to the regulations to be observed in the use of travelling cranes. On the 6th November the ganger did not obtain my permission to commence work. When I left the cabin to attend to the down train, I gave no instructions to Sharpe to accept the "Be ready" for the up express, and he should not have done so without calling out to me to ask for permission. Nor should he have lowered the signals till I told him to do so. If I had been in the cabin, I should have looked to see if the line was clear before accepting the "Be ready." When the travelling crane is in use, I have usually given the "Shunting signal" to the block-cabin in rear; that is, six beats of the needle to the left, after which the needle is pegged to "Train on line" by the sender. This would prevent any train being permitted to leave the cabin in rear till this shunt-signal is cancelled. On this occasion I omitted to do this. I ought to have done it as soon as the men commenced work. There were two cranes on the spot, but only one was at work at the time the up express arrived. I have given Sharpe no instructions not to work the block telegraph instruments and outdoor signals during my absence from the cabin. I have called his attention to the rule concerning travelling cranes when fouling the main lines. I am quite sure that when I got back to the cabin Sharpe had already accepted the "Be ready" and received the "On line" and lowered the signals for the up train. When the timber loaders arrived, they knew quite well what they had to do and I assumed that the arrangement previously made with the ganger, as to warning him when a train was approaching, would still hold good. I had instructions from the district superintendent not to permit Sharpe to work the block instruments or take charge of the cabin except under my supervision, until he had been passed as qualified for signalman.

George William Sharpe, porter, states: I have been in the Company's service about four months, and I have been at Everingham as porter five weeks. I came here to be porter-signalman, but I am not yet passed as signalman and I have been learning the block rules and instruments all the time I have been here. On the 6th November I came on duty at 8.30 a.m. I went direct to the signal-cabin. I found the station-master there. I did not at that time notice whether any men were working at the travelling crane. At 9.1 a.m. I received the "Be ready" for the down train. I accepted it under the station-master's instructions. At 9.8 a.m. I received "Train on line." I passed the "Be ready" on to Shipton Lane, and it was accepted. I am not sure whether the station-master was still in the cabin. I lowered the signals for it. The train arrived at 9.12 a.m. and I placed the signals to danger behind it. Just as the down train left the station I received the "Be ready" for the up express. That is at 9.12. I was then alone in the cabin, and I accepted the "Be ready." At 9.13 a.m. I received "Train on line" from Shipton Lane. By that time the station-master had returned to the cabin, and he passed the "Be ready" on to Holme. I told him what I had done, and he made the remark to me, "I will pass the 'Be ready' on." It was accepted from Holme, and I then went and pulled the boards off, the station-master being still present. When I accepted the "Be ready" I gave a look down the line, but I never noticed the travelling crane. I knew the loaders had arrived, as I came in the same train with them from Market Weighton, but I did not think whether they had commenced work or not. I heard the engine whistling, and I then went to the window to look and then I saw the crane foul of the line and the engine

close on to it. The station-master noticed it about the same time, at least, he remarked about it then. I cannot say for certain what it was he said. I have not received any instructions from the station-master not to touch the instruments and signals during his absence from the cabin, but I knew that was the rule. But I have several times been left alone in the cabin to do all the work from the opening of the cabin till 9.30 a.m. The station-master would on such occasions come up to sign the book and then go away again. On some days he would stop and look after the block, but I have been in the habit of working the "block" on my own account whenever the station-master was absent from the cabin. My attention has never been specially drawn to the rules about travelling cranes by the station-master, but I knew the rules, having studied them in the rule-book. I have been in the habit, when alone in the cabin, of blocking back (giving the shunt-signal) to Shipton Lane, when the travelling crane was in use, and have entered it in the train-book. I learnt to do this from the other signalman. I cannot say whether the station-master ever does this. He has never instructed me to do it. I knew there was an understanding between the ganger and the station-master that when a train is due the man in the signal-cabin is to call out and warn the loaders to clear the line. This would be done before accepting the "Be ready" for a train. I did not warn them on this occasion, because I did not notice they were at work at the crane. If the shunt-signal had been on I should have known the crane was at work. I knew the men had come to work the crane, but I forgot about it before I went to the cabin. There was nothing between the cabin and the crane to prevent my seeing the latter. I am quite certain that the station-master passed the "Be ready" on for the up train to Holme himself, and that I did not lower the signals till it had been accepted.

Michael Walker, station-master, recalled, states: I gave the "Train on line" signal to Holme for the up express at 9.14, but I did not give the "Be ready." When I gave the "Train on line" to Holme, the train would be about 300 yards from the cabin. I am still quite certain that I did not send the "Be ready" on to Holme for the up express. I have occasionally left Sharpe alone in the cabin to work the block. Sharpe, when he first came here, objected to do porter's work, saying that he had come to learn the block. I wrote to the district superintendent about it, and was told that the inspector would speak to me and Sharpe about it at his next visit.

John Heppell, ganger of timber-loaders, states: I have been in the Company's service 16½ years, and I have been ganger of timber-loaders for seven or eight years. On November 4th, I was sent to Everingham from York with two men for the purpose of loading timber in the siding. Two cranes had arrived the previous day. I did not have any conversation with the station-master on the 4th November as to commencing work, nor did I ask his permission to do so. On the 6th November I again went to Everingham and commenced work at the same time as before, and I did not ask his permission to commence work on that day either. I have a copy of the general manager's order, No. 62, of 1st July 1893, and I know the rule that the ganger should give notice to the station-master or signalman that he is going to foul the main line and get his permission to do so, and also to see that the signals are on before commencing work. I did not do so on the 4th or 6th November, because I and the station-master had previously arranged, when working here before, that he would always give us a signal from the cabin on the approach of an up train, and that I need not go every day to give him notice about commencing work. When the arrangement was first made I was here for a week or ten days loading every day. That was about three weeks before the collision. I do not remember the station-master repeating the arrangement to me on the 4th, but he gave us warning from the cabin on the 4th instant, of the approach of the up express 9.5 from Market Weighton. On the 6th I did not notice that the signals had been lowered till the engine was close on to us. My attention was attracted by the alarm whistle from the engine. All I had time to do was to warn my men and get out of the way. We had lifted a large tree and found it necessary to cut one end off, and the two men were busy cutting the tree and I was measuring it. The engine struck the balance-box of the crane, and broke the balance-box and tail of the crane, so that the jib fell forward on to the ground. Only one crane was then in use. Before commencing work I had looked to see that the signals were at danger. I knew the express was due, but I had forgotten about the time, being occupied with my work. I have a copy of the time-table and rule-book. I understood that the arrangement made with the station-master relieved me of the responsibility of watching the signals.

Leonard Taylor, driver, states: I have been in the Company's service since 1864, and I have been driver for 23 years. On 6th November I came on duty at 7.20 a.m., having come off duty at 10.30 p.m. the previous night. On the 6th instant I was working the 8.20 a.m. express train Bridlington to Leeds. We were three minutes late from Market Weighton, leaving there at 9.8 instead of 9.5 a.m. My engine is a four-wheels coupled tender-engine, and I had six vehicles on, including brake-van. The train was fitted throughout with the Westinghouse automatic brake, working blocks on the four coupled wheels, on all the six wheels of the tender and on four wheels of of all the vehicles in the train. On approaching Everingham I found all the up signals, distant, home, and advance, off for me. When I was about 200 yards away I noticed the crane fouling the main line. I was then running about 40 miles an hour. I shut off steam and put the brake full on. The wheels picked up at once, it being a greasy morning. I had reduced the speed to between 25 and 20 miles an hour before the engine struck the crane. The balance-box of the crane seemed to be just over the outer rail. The tail of the train ran about 120 yards beyond the crane when the train came to a stand. A hole was knocked through the smoke-box of my engine, left-hand leading-spring broken, the left-hand lubricator to the cylinder was broken and other damage done. A few axle-boxes in the train were broken. I did not see the crane earlier as the steam from the down train was blowing across the line and obstructed my view. The line is straight for about 1½ miles, and there would have been a good view along it if it had not been for the steam.

Conclusion.

It is somewhat remarkable that no more serious consequences resulted from this collision, than a moderate amount of damage to the engine and rolling-stock. The following appear to be the circumstances under which it occurred. It being necessary to despatch from Everingham station some large timbers, the station-master applied in the usual course for cranes and loaders to be sent to the spot. Two cranes arrived on the 3rd November and were placed in the siding, and the loaders, consisting of a ganger and two men, arrived from York and commenced work on the morning of the

4th November. On Sunday, 5th November, no work of course was done, and on Monday morning the men resumed work, arriving from York by the train due at Everingham at 8.7 a.m. The men set to work each morning without making any communication to the station-master, although the rules already referred to lay down in very clear terms that travelling cranes, which are likely to foul main lines, are not to be brought into use until the station-master's authority has been received. The reason given by ganger Heppell for this departure from the rules is, that about three weeks previously, when similar work was in progress at the same place, station-master Walker told him that it was not necessary for him to ask for authority every time he commenced to use the travelling crane for the purpose of loading timber, as he (the station-master) would always give warning from the signal-cabin to the loaders, by whistling or shouting, whenever it was necessary to shift the crane clear of the up main line to allow a train to pass. This somewhat vague understanding was tacitly assumed by both the station-master and the ganger to be still in force on the morning of the 6th November.

There are usually stationed at Everingham two porter-signalmen (besides the station-master), who divide between them the work in the signal-cabin and the ordinary station duties. But on the 6th November, there was only one porter-signalman at this place, the second man, who at present is classed as a porter, not being as yet qualified to act as signalman. This man, whose name is George Sharpe, has recently been sent to Everingham in order to learn the duties of signalman under the instructions of the station-master, who, so long as these arrangements are in force, is supposed to be on duty in the signal-cabin from 7 a.m. to 9.30 a.m., and again from 5.30 p.m. to 8.20 p.m.

On the morning in question, Sharpe came on duty at 8.30 a.m. and went straight to the signal-cabin, where he found the station-master. At 9.8 a.m. the station-master left the signal-cabin in order to book passengers for the down train due at that time, but which did not arrive until 9.12, being four minutes late. Immediately after the arrival of the down train, Sharpe, who was alone in the signal-cabin, was offered "Be ready" for the up express from Bridlington to Leeds, and he accepted it. At 9.13 he received "Train on line," and immediately after this the station-master returned to the cabin, and on hearing what Sharpe had done, he passed the "Be ready" for the up express on to the cabin next in advance, and on this being accepted, Sharpe proceeded to lower the signals for the train, having, as he states, first looked out to see if the line was clear. At this time the timber-loaders were at work, and the travelling crane was in such a position that the balance-box was projecting over the left-hand rail of the up main line, but the station-master appears to have forgotten about it, and Sharpe did not notice it, and no warning was given by either of them to ganger Heppell of the approach of the up train. The attention of these three men was first called to the danger by the driver of the express, who, seeing the crane foul of the line when he was about 200 yards away, gave the alarm whistle in sufficient time to enable the loaders to get out of harm's way. The train was travelling at 40 miles an hour, when the driver first saw the obstruction, and though steam was immediately shut off and the brake applied full power, the train was still travelling at about 20 miles an hour when the engine struck the balance-box of the crane, and it ran about 120 yards past the crane before coming to a stand. The damage to the crane, engine, and rolling-stock has been already described, and fortunately no passenger or servant of the Company was in any way injured. The engine was removed from the train and put into a siding, and a goods engine was procured to take the train forward to York.

There is a discrepancy between the evidence of station-master Walker and that of porter Sharpe. The former states that when he returned to the signal-cabin, he found that the signals had already been lowered for the up express, and that he merely gave "Train on line" to the signal-cabin at Holme. From this it would appear that Sharpe had sent the "Be ready" forward to Holme and had it accepted before the station-master's return. But Sharpe denies this. He acknowledges that he received the "Be ready" from Shipton Lane and accepted it before the station-master returned, but he is positive that it was the station-master who passed the "Be ready" on to Holme, and that the signals were not lowered until after this had been done, and were therefore standing at danger when the station-master reached the cabin.

Of the two versions I am inclined to accept Sharpe's, and I am of opinion that the signals for the express were not lowered till after the station-master had returned, and that the latter's evidence is not to be relied on.

From the above account it is evident that two irregularities occurred on the morning in question, the first being the departure from the rule (already quoted) which makes it incumbent on the ganger to obtain the sanction of the station-master and signalman before commencing to make use of a travelling crane; and the second is the fact that, contrary to instructions, porter Sharpe was left to take charge of the block instruments, &c., in the signal-cabin although he was not a qualified signalman.

It also appears to be a usual precaution, though not laid down in any rule, for the signalman to give the shunting-signal to the cabin in rear, and to peg over the needle of the block instrument to "Train on line" when any obstruction exists inside the home-signal. This serves as a reminder to both signalmen that the line is obstructed. But the stationmaster omitted to do this on the morning in question, and there was nothing, therefore, to indicate to Sharpe when he was left alone in the cabin, and who had received no communication from the ganger, that the crane was at work. There is no doubt that the non-observance of the rules and instructions referred to, and the omission to take the simple precaution of blocking back to Shipton Lane, led up to the collision.

A station-master is bound to be thoroughly well-acquainted with the rules and regulations concerning travelling cranes, and as recently as July last the special attention of all station-masters and others was drawn to these rules by the printed circular, already referred to from the general manager's office of the North-Eastern Railway. These rules lay down that "Whenever a crane is in use whereby the jib or any other "portion of it obstructs or fouls any line of rails used for traffic purposes . . . . . "it is incumbent on the person in charge of the loading to obtain the sanction of the "station-master and signalman in charge of the safety of the line, and to see that "the proper signals are exhibited until the operation is completed.

"Timber-loaders working at a station will be under the control of the station-"master, who, whilst they are so employed, must exercise the same supervision over "them as over his own staff."

In place of enforcing this rule station-master Walker some weeks previously had improperly made some arrangement with ganger Heppell, whereby the latter appears to have been given a sort of general authority to use the travelling crane for loading timber whenever necessary without first obtaining the station-master's authority to do so, the latter agreeing to give a warning shout or whistle from the cabin when an up train was due. This constituted a serious breach of the rules and led up to the collision, though it was Walker's failure to carry out his share of the arrangement rather than the arrangement itself, that was the immediate cause of the disaster. Had ganger Heppell obtained fresh sanction to commence work on the morning in question, the station-master would have been reminded that work was going on in the siding and it is probable that he would have informed the signalman at Shipton Lane that the line was obstructed at Everingham, using for this purpose the "shunting-signal," which would have served as a constant reminder to the men in both cabins of what was going on.

Station-master Walker had also received distinct instructions that porter Sharpe was not to be allowed to work the block instruments, except under proper superintendence, until he was passed by superior authority as a qualified signalman. It appears, however, from both Walker's evidence and Sharpe's, that the latter has been often left alone in the cabin to "work the block" (as it is termed) entirely on his own responsibility. This again constitutes a distinct breach of instructions which under general circumstances is deserving of severe censure. But so far as the particular train is concerned to which the collision occurred, it is difficult to see how the station-master could have complied with his instructions in this respect without causing delay to the express or to the down slow train. Both trains were running late, and if, after receiving the block-signals for the down train, Walker had waited in the cabin for the block-signals for the express, before proceeding to book passengers for and attend to the down train, the latter would have been still further delayed. On the other hand, if the block-signals for the express were not to be acknowledged and forwarded until Walker returned to the signal-cabin after the departure of the down train, the express would have been delayed.

I am not therefore disposed to blame station-master Walker for his error of judgment in leaving Sharpe to work the block instruments for this up express train, but this does not absolve him from grave responsibility for having left Sharpe alone in the cabin to "work the block" for a whole morning at a time, a custom which, according to the evidence of both these men, appears not to have been infrequent.

Station-master Walker not only neglected to carry out the rules himself, but he also encouraged others to do the same, and the responsibility for the collision must rest upon him. He had been on duty about two hours and twelve minutes.

Ganger Heppell was altogether in the wrong for having agreed to the arrangement proposed by the station-master, by which it was understood that he (Heppell) was absolved from the necessity of seeking the authority of the station-master every time he commenced work with the crane. Heppell is a man of experience, and it might have been fairly expected of him that, for his own safety and for that of his men, he would have refused to depart from the strict letter of the regulations. And though gangers are expressly placed by the rules under the authority of station-masters, Heppell would have been fully justified in refusing to accept from his superior any instructions contrary to the rules, and he must therefore be regarded as deserving of censure for not making that refusal. He had been at work for about an hour at the time of the collision.

Porter George William Sharpe seems to have been placed in a difficult position. He knew that it was contrary to orders for him to touch the block instruments except under the supervision of the station-master or of the other signalman. But he had on more than one occasion been left alone to do all the work of the signal-cabin, and he was aware that if he did not accept the "Be ready" for the up express, that train would be delayed and perhaps some complaint made in consequence. It is surprising that when he looked out of the window to see if the line was clear before lowering the signals for the express, he did not observe that the crane was foul of the line. He had, however, received no direct intimation that the men were at work with the crane, and this fact added to inexperience probably conduced to his failure to observe the crane. Moreover, the station-master had returned to the cabin before the signals were lowered, and it was his duty, and not Sharpe's, to have seen that the signals were not lowered till the line was clear and to have given the warning that a train was due to ganger Heppell, according to arrangement.

Taking everything into consideration I am unable to blame Sharpe for acting as he did.

No blame appears to attach to driver Taylor of the express. The steam from the down train interrupted his view of the line, and as soon as he saw the obstruction, he did all he could to stop his train.

I would suggest, that, if possible, some instructions should be issued by the Company as to blocking back to the signal-cabin in rear, when the line through a station is obstructed by the use of a travelling crane, or in other ways. The orders in existence for the protection of trains when shunting from one line to the other might be extended so as to render it obligatory on a signalman to give the "shunting-signal" and to peg his needle over to "Train on line" whenever a travelling crane is in use in a position which renders it likely to foul a running line, or in fact, whenever any similar obstruction exists in a station, instead of leaving it as at present to the option of the signalman to make use or not of this signal as he pleases.

This collision directs attention to the desirability of training signalmen under more satisfactory conditions than those disclosed in this report. I can imagine no worse training for a signalman than to be sent to a small station, where discipline is lax and where, from the first day he enters the signal-cabin, he finds rules set at nought and ordinary precautions for the safety of the line neglected. Rules, however admirable, are valueless unless they are obeyed, and it is only by the most careful training that the necessity for unswerving and unquestioning obedience can be inculcated. The subject is one deserving of consideration.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) H. A. Yorke,
Major, R.E.

APPENDIX.

Damage to Rolling-Stock.

Engine 1,939.—Hole knocked through smoke-box, left-hand leading-spring damaged; both adjusting screws broken; hand-rail on left side bent; foot-plating bent; left-hand leading axle-box of tender broken, and also left-hand driving-springs.

North-Eastern van 199.—Footboards broken and step-iron bent.

North-Eastern composite 1,023.—Westinghouse release broken.

North-Eastern composite 1,022.—One axle-box broken and gas-tank strap shifted.

North-Eastern third 1,119.—Two footboards damaged.

North-Eastern third 888.—One axle-box broken and footboards damaged.

CIRCULAR issued by GENERAL MANAGER in July 1893.

Travelling Cranes.

The attention of goods agents, station-masters, guards and others concerned, is called to Nos. 137, 138 and 255 of the general rules and regulations, which read as follows :—

137. Before removing any travelling crane, the person in charge of it must see that the jib is properly lowered and secured, and so fixed that it will pass under the gauge: and, when it has to be removed by train, it must, when practicable, be so placed that the jib points towards the rear of the train.

The station-master or person in charge of the siding for the time being, and the head guard of the train, must, before a crane is attached to a goods train, *take care that all the fastenings provided for the purpose of securing the jib and balance-box in their proper positions during transit are in good condition and applied*, and that the necessary match-waggons are provided. At each stopping-place on the journey the head guard must satisfy himself that the fastenings are secure. Waggon examiners must also inspect the fastenings in addition to the usual examination of the wheels, &c. If any defect exist in any of the fastenings, the crane must not be attached to a train, and, if travelling, it must be detached for the fastenings to be made good.

138. Whenever a crane is in use whereby the jib, or any other portion of it, obstructs or fouls any line of rails in use for traffic purposes, or whenever, by any possibility, during the loading or unloading of round timber, long timber, angle iron, or other articles of great length, the main line may be fouled, it is incumbent on the person in charge of the loading or unloading to obtain the sanction of both the station-master and signalman in charge of the safety of the line, and to see that the proper signals are exhibited until the operation is completed.

Timber-loaders working at a station will be under the control of the station-master, who, whilst they are so employed, must exercise the same supervision over them as over his own staff.

* * * * *

255. Before attaching any travelling crane to his train, the guard must see that the jib of the crane is properly lowered and secured, and so fixed that it will pass under the gauge, and it must, when practicable, be so placed that the jib points towards the rear of the train.

Care must be taken that Rules 137 *and* 255, *especially in regard to the portion of Rule* 137, *which is printed above in italics, are observed in all cases of removal of travelling cranes, whether in course of conveyance, during shunting, or in any other way.*

GEORGE S. GIBB,
General Manager.

Printed copies of the above Report were sent to the Company on the 28th December.

NORTH-EASTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
December 14th, 1893.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 2nd instant, the result of my enquiry into the collision that occurred on the 24th November at West Hartlepool station on the North-Eastern Railway.

On this occasion the engine of the 8.59 a.m. train from West to East Hartlepool, in setting back on to its train, struck the latter with such force that one of the engine buffers was broken, the leading wheels of the first vehicle were thrown off the rails, and the train itself driven back about 12 yards.

Eight passengers were seated in the train, and of these four complained of shock or minor injuries.

The train consisted of four coaches, and it was fitted throughout with the Westinghouse automatic brake, which, however, was fortunately off at the time of the collision.

The only damage done to the train consisted of one buffer-rod bent.

The engine was a four wheels coupled bogie tank-engine, fitted with the Westinghouse brake and the hand-brake, both working blocks on the four coupled wheels.

Description.

West Hartlepool is a one-sided station, having one long main platform, and dead end bays at each end. The main platform is used for the arrival and departure of trains in both directions. Outside the platform line there is a loop line, and about half way down the platform there is a scissors crossing between the two lines.

The train to which the collision occurred had arrived from East Hartlepool at 8.55 a.m., and had pulled up just short of the scissors crossing, and the rear vehicle, which became the leading vehicle of the return train to East Hartlepool, was situated 52 yards from the end of the platform. About 215 yards from the platform, or

259 yards from the point of collision, there is a cross-over road between the loop line already referred to and the main line, and adjacent to this cross-over road is the Clarence Road junction signal-cabin. From the points of the cross-over road up to the end of the platform there is a gradient of 1 in 165, falling towards the station.

Evidence.

Thomas Hardcastle, driver, states: I have been in the Company's service 21 years, and I have been about six years driver. On the 24th November I came on duty at 4 a.m., having come off duty at 2 p.m. on the 23rd. I had been on duty 10 hours on the 23rd. On the morning of the 24th I was employed as follows:—I worked the 5.35 a.m. passenger train from East to West Hartlepool; the 7 a.m. from West to East Hartlepool; the 7.40 from East to West Hartlepool, and was so employed working the short local service between the two towns up to the time of the collision. At 8.49 I took a train from East Hartlepool to West Hartlepool, and arrived at the latter place 8.55 a.m. The train consisted of tank-engine No. 615, and four vehicles. The engine has four-wheels coupled, and trailing four-wheeled bogie, and it is fitted with the Westinghouse brake working blocks on the four coupled wheels. The train was also fitted with the Westinghouse brake throughout. I arrived at West Hartlepool at right time, running bunker first, and I ran into the main platform and stopped just short of the scissors crossing. As soon as we stopped the fireman uncoupled the engine, and we went through the cross-over road on to the loop line, so as to run round the train. I then ran back as far as Clarence Road junction-cabin, and set back through the points near the cabin on to the platform line for the purpose of joining my train. I was due out at 8.59. The time allowed between arrival and departure is four minutes, and it takes about three minutes to get round the train. The distance from the points near Clarence Road cabin to the point of my train was about 240 yards. The end of the train was just over the subway. After passing through the points on to the platform line, I shut off steam as I passed the cabin. I should then be going at about 10 miles an hour. The fireman braked the engine down the incline with the hand-brake and the Westinghouse brake was not being used at all. When we were about 15 to 20 yards from the train the fireman jumped off the foot-plate on to the platform for the purpose of coupling the engine on to the train. The hand-brake was then off, and we were going at about four miles an hour. After the fireman jumped off, I started to step across to his side of the engine to steady the engine against the train by means of the hand-brake. In doing so, my left foot slipped off the raised foot-board, and I fell backwards on to the foot-plate, and in falling I put out my hand to save myself and caught hold of the lower handle of the regulator, and thereby gave the engine steam. I realised what I had done and at once jumped on my feet as quickly as possible to do all I could to stop the engine. I cannot say whether I shut off steam first or applied the Westinghouse brake first, but by the time the engine struck the train, steam was shut off and the Westinghouse brake hard on. I cannot say what speed I struck the train at. I was not injured in any way, and I do not think any coal was thrown off the bunker by the collision. I was setting back bunker first. I was not travelling any faster than usual, and I have no doubt that I could have stopped the engine in time with the hand-brake if I had not slipped. I did not intend to use my Westinghouse brake at all for checking the engine when setting back on to the train, and should not have done so if I had not fallen. I jumped off at once to see whether my fireman was between the buffers, but found he had not got down off the platform.

John Alfred Fawcett, fireman, states: I have been in the Company's service nine years, and 2½ years fireman, and I have been firing for driver Hardcastle for about three months. On the 23rd and 24th November my hours of duty were the same as my driver. I remember coming in with the 8.49 train ex East Hartlepool. We arrived about right time. We pulled up short of the scissors crossing, and I uncoupled the engine, which then ran round the train by the loop line. After setting back through the points near Clarence road junction, my driver shut off steam just against the cabin. We were then going about 10 miles an hour as near as I can tell. I used the hand-brake to steady the engine down the incline. I released the hand-brake about the end of the platform, and I jumped off the footplate on to the platform when we were about 15 or 20 yards from the train. We were then going about four or five miles an hour. I ran a few yards to get in front of the engine. When I was about five or six yards from the train, I prepared to get down on to the line, but I heard the engine coming back rather sharper than it should have done. I looked round and remained upon the platform. It was travelling faster than when I got off, but I cannot say what speed it was travelling at when it struck the train. I believe steam was off, but I do not know whether the brake was on. As the bunker passed me, the driver was just rising on to his feet. The Westinghouse brake was not used at all, from the time we passed the cabin till I got off the engine.

John Crooks, guard, states: I was standing on the platform near the tail of the train when the engine was setting back. We had arrived to time, and the driver had taken about the usual time to run the train. I did not notice the engine coming back, and the first I knew of anything wrong, was the fact that the tail of the train was driven back about 12 yards. The brake-blocks were off the train. I cannot say whether the brake was on the engine or not. The train consisted of four coaches, including two brake-carriages, and they were all fitted with the Westinghouse brake. There were eight passengers seated in the train when the collision occurred, including three Company's servants. I am unable to express any opinion as to the cause of the collision. I know driver Hardcastle, and have often worked with him, and I have always found him to be a steady, reliable man.

Conclusion.

The evidence in this case is somewhat scanty, as only two men, the driver and the fireman, are in a position to say what happened.

The train which runs between East and West Hartlepool arrived at 8.55 a.m., and was pulled up at the main platform just short of the scissors crossing. The engine, which arrived with its bunker in front, was uncoupled, and passing through the crossing on to the loop line, ran back as far as the Clarence Road junction cabin, and then

set back through the cross-over road at that spot on to the main line for the purpose of joining its train, this being the regular mode of working. The cross-over road is situated 215 yards from the platform, and 259 yards from the point of collision. The train was due to start on its return journey at 8.59, the interval between its arrival from and departure to East Hartlepool being only four minutes. The average time occupied by the engine in running round its train is three minutes, so that there is not much margin.

Driver Hardcastle asserts that when he commenced to set back on the main line, he passed the signal-cabin at a speed of 10 miles an hour, at which place he shut off steam; and that the hand-brake was then applied for the purpose of steadying the engine down the incline into the station. He estimates the speed, as he passed the end of the platform at four miles an hour. The fireman jumped off the engine as soon as it reached the platform, and ran forward for the purpose of coupling the engine on to the train, and the driver stepped across the foot-plate to the fireman's side in order to apply the hand-brake so as to steady the engine on to its train. The engine is provided with raised foot-boards on each side, and as the driver stepped from one foot-board to the other, his left foot slipped, and he fell backwards on to the foot-plate. In trying to save himself from falling he instinctively threw out his hand and accidentally caught hold of the regulator handle, thereby opening the regulator, and giving the engine steam. He instantly realised what he had done, and jumping on to his feet, he at once closed the regulator again and applied his Westinghouse brake, and about the same moment the engine, which had, of course, gained speed by the opening of the regulator, struck the train with the results already detailed. Fortunately the fireman, whose evidence agrees with that of the driver, noticed that the speed of the engine had suddenly increased, and he therefore remained on the platform instead of getting down between the buffers of the front vehicle of the train. Had he descended from the platform he would undoubtedly have been injured. The guard and station staff were occupied at the time with duties at other parts of the platform, and did not see what took place prior to the collision. Driver Hardcastle bears an excellent character, and there being nothing in any way improbable in his explanation of the mishap, and no evidence to indicate negligence on his part, it may be accepted as correct. Under these circumstances the collision must be regarded as purely accidental, and no blame can be attributed to any servant of the Company.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

H. A. Yorke,
Major, R.E.

Printed copies of the above Report were sent to the Company on the 29th December.

NORTH-EASTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
21st December 1893.

Sir,

I have the honour to report for the information of the Board of Trade, in compliance with the Order of the 1st instant, the result of my enquiry into the accident that occurred on the 27th November at Ulleskelf station, on the North-Eastern Railway.

On this occasion, the Lancashire and Yorkshire Company's 11.45 a.m. express train from Manchester to York, while passing through the above-named station at a speed of about 60 miles an hour, ran into a horse which had strayed on to the railway, and which was standing between the outer rail of the down line, and the gates of the high-road which crosses the line on the level at this place. The body of the horse became entangled in the wheels of the train, and before the latter could be stopped, two vehicles were forced off the rails, and the body of one of them became separated from the under-frame, and was turned over on to its side, the frame remaining upright.

Six passengers are reported to have complained of injury, two of whom were in the carriage that was overturned, but in no case were their injuries serious.

The train consisted of a four-wheels-coupled tender passenger engine, and eight vehicles marshalled as follows, viz., carriage-brake, two composites, carriage-brake,

third-class carriage, one composite, third-class carriage, and lastly a carriage-brake. The engine, tender and train were fitted with the automatic vacuum-brake.

The engine remained on the rails and received no injury, but six of the vehicles forming the train were damaged, in two cases to a serious extent. (For details *see* Appendix.)

Two hundred yards of the permanent-way was more or less destroyed, 95 ordinary chairs, and 25 point chairs were broken, the trailing-points of the cross-over road and of the down goods-siding were swept away, and a considerable number of sleepers were damaged.

Description.

Ulleskelf station is of the ordinary type of roadside stations, being provided with up and down platforms connected by a foot-bridge, and protected by the usual signals. At the northern extremity of the platforms the railway is crossed on the level by the high road from Ulleskelf to Kirkby Wharfe, the gates of the crossing being interlocked with the signals, and worked from the signal-cabin which is close to the gates on the down side of the line. North of the high road and communicating with it by means of gates, there are two goods yards with sidings, one on the up and one on the down side of the lines. The sidings are connected with both up and down lines by trailing-points, and there is also a trailing cross-over road between the two main lines.

The advance starting-signal at which the engine came to a stand after the accident, is 343 yards from the signal-cabin or about 350 yards from the centre of the level crossing gates, against which the horse was standing when it was struck by the train.

The station is approached from the south by a slightly rising gradient of 1 in 1,175. The line is straight and the driver has a good view through the station, but the view from the signal-cabin towards the south is somewhat interfered with by the foot-bridge.

The gates of the goods yards are kept locked during the night, but they are unlocked during the day, and any one can gain access to the goods yards from the high road. There is no one whose duty it is to see that the gates are kept closed, and it would seem to be the case that when once they have been opened for any purpose they so remain for the rest of the day.

Evidence.

Samuel Henry Boston, signalman, states: I have been in the Company's service 18 years, and have been signalman at Ulleskelf 9½ years. On the 27th November I came on duty at 6 a.m. for a 12-hour spell. I came off duty the previous night at 6 p.m. About 1.30 p.m. on the 27th November I saw two horses, belonging to Mr. R. Powell, straying about on the high road on the down side of the line; the level crossing gates were at that time closed across the line and open to the highway. I do not make a practice of keeping the gates open for the road, but I had opened them a few minutes previously to allow some carts laden with coal to cross the line. At 1.30 p.m. I received the "Be ready" for the 11.45 a.m. express from Manchester to York. I accepted the train at once, before closing the gates. There is no rule to the effect that the gates are to be closed across the road before accepting the "Be ready" for a train. After accepting the "Be ready" I looked out to see if the crossing was clear for me to close the gates. I then saw that one of the two horses was crossing the line, while the other had turned away towards the place known as West End, on the down side of the line. The two horses having got separated, I watched the horse go across the line, and as soon as it was over I closed the gates behind it. I then got the Lancashire and Yorkshire express "On line" at 1.32. After that I passed the "Be ready" for the express forward to Bolton Percy, and after receiving the acknowledgement I lowered my signals for the train. I looked out before doing this, and I saw the horse standing outside the gates on the up side, looking over the fence alongside of the gate. After I got my signals off at 1.33 p.m. I got "Train on line" from Bolton Percy for a coal train which did not arrive till after the accident. I then went to book the two trains, and while I was doing this I heard a shouting and I went to the door to see what was up, and I then saw the horse on the edge of the down platform near the gates. I saw two men trying to drive the horse off the line towards the goods yard on the up side. They succeeded in getting it clear of both the main lines into the goods yard. The horse then doubled back on them and got on to the down line again close to the gates. As soon as I saw it was on the line again I threw my signals up in front of the express, but it was too late. The train was close on to the home-signal when I threw it up, and the driver would not have time to see it. The view from the cabin is blocked by the foot-bridge. When I first saw the train it was inside the home-signal. I threw the signals up as soon as the horse doubled back without waiting to look for the train. I knew the goods yard gate was open when the horse was crossing the line. It had been opened by two lads who had been to fetch some iron piping out of a waggon. They had gone away about five minutes before the horse crossed, and left the gate open. It is not my business to see that the goods yard gate is kept shut. It did not strike me that the horse would come through the goods yard gate. I did not see it return on to the line, but I believe it came through the goods yard gate. When the train struck the horse, it was close up to the level-crossing gate on the down side. The engine did not strike it. The horse seemed to press against the gate and then was pushed out against the train, and the leading van of the train caught it on the near shoulder. The horse then

disappeared from my view, and was dragged along under the train. The train came to a standstill with the last van just clear of the points of the down goods siding. I then saw that the road was torn up, and one carriage on its side, and the horse was mangled to pieces. I cannot say whether the driver had shut off steam, or put on his brake before striking the horse, but I heard him sound his whistle when he was coming up the platform. The train was travelling at about 50 miles an hour, so far as I can judge. It was running two minutes late. The key of the goods yard gate is not as a rule kept in the cabin. The gate stands open as a rule during the day. If I saw any cattle coming down the road which were likely to go upon the line, I should call the attention of the porter or someone of the station staff to the goods yard gate. Before the horse crossed the line at all, I had seen the station-master and the porter driving the two horses out of the coal yard on the down side of the line. It was after this that one horse went down towards the West End and the other crossed the line. I cannot say whether the gates of the coal yard were shut behind the horses or not. I did not lower the signals till after I had received "On line" for the express. It was two minutes from the time I received "Train on line" to the time the horse was killed. It is not possible to close the gates as soon as the "Be ready" is given for a train because the public complain so much of being delayed. The same two horses have been in the habit of straying on the highway all through this summer, and they have been a constant nuisance.

George Henry Stephenson, stationmaster.—I have been with the Company 22 years, and I have been stationmaster at Ulleskelf 2½ years. On the 27th November I came on duty at 7 a.m. About 1.25 p.m. I was in the down goods yard and I saw the two horses belonging to Mr. Powell entering the yard. The porter who was there went and drove them out into the road. I did not notice where they went to. I heard the Lancashire and Yorkshire express passing the goods-siding, and I saw one of the carriages oscillating very violently. I ran towards the train and held up my hands to the driver. I cannot say whether steam was on then. I did not see the carriage turn over. I saw the train come to a standstill, and when I reached it I saw that one carriage-body had left the frame and was lying on its side in the 6-ft., while the frame was standing right way up. The engine was on the rails, the carriage-brake next the engine was also on the rails, the second vehicle, viz., a composite, was on the rails, the third vehicle also a composite was on the rails; the fourth vehicle, viz., a carriage-brake was buffer-locked with the third vehicle and was on the rails. The fifth vehicle (a third-class) was off the rails. The next one, a lavatory composite, was overturned, the frame remaining on its wheels, but off the rails. The next (a third-class) was damaged at the leading end, but was on the rails, the last vehicle (a carriage-brake) was on the rails. I went to the signal-cabin as soon as possible to send messages for breakdown gangs. I also sent forward to stop any train on the up line. There are no special instructions about the goods yard gates. They are locked at night and the key is kept in the porter's room. They are unlocked at 7 a.m., but not opened till some vehicle requires to go through. They are not generally kept closed, there being a good deal of goods traffic in and out of the yards. I cannot say that I have myself seen the horses straying about near the line previous to the accident, but since it occurred I have heard that they have been about. There were only two passengers, so far as I know, in the lavatory carriage which was overturned.

Herbert Peers, driver, states; I have been in the Lancashire and Yorkshire Company's service 33 years, and I have been driver for about 21 years. On the morning of the 27th November I came on duty at 10.45 a.m., having come off duty about 6 p.m. the previous day. I was driving the 11.45 a.m. train from Manchester to York. My engine was No. 1,001, four-wheels-coupled passenger engine, with leading bogie and six-wheeled tender. There were eight vehicles on the train. The engine and train were fitted throughout with the automatic vacuum-brake. The brake was in good order. On approaching Ulleskelf, when I first sighted the distant-signal it was on. I should then be at least 400 or 500 yards from it. I gave a whistle, and before I reached it it was lowered for me. I passed it at about 45 miles an hour. When I sighted the home-signal soon after passing the distant, it also was off. I did not see the signal thrown up as I approached it. And I did not see the horse in the road until I heard something strike the van, and saw something being rolled over and over between the gates and the van, and at once shut off steam and applied the brake hard. I should be travelling about 45 miles an hour. I whistled on approaching the level crossing according to custom. I had looked out befcre whistling and the line seemed all clear. I then turned round to shut the injector off, and I think the horse crossed in front of the train while I was so engaged. When I stopped, my engine was on the rails, and no damage was done to it. I did not know anything was off the road until I came to standstill. I did all I could to stop my train and could not have done any more. When I first saw the advance-signal it was off. My engine was just against the advance-signal when I came to a stand.

Thomas Claxton, labourer, states: On the morning 27th November, I was working in the goods yard on the up side breaking stones for metalling. There was another man with me. About 1.30 p.m., my attention was called by a man, who was alongside of us in the yard, to a horse coming through the goods yard gate. It went straight across to the down platform. It was then on the the line near the down platform, and going up on to the platform when I went after it. Another horse at the same time was standing on the platform near the steps. I drove the first one back to the yard, and frightened the other off the platform through the wicket. I followed the first horse so as to drive it through the gate. One or two other men had joined me, and we were trying to drive it back, when it rushed between us and ran across right in front of the train. The train was just coming along the platform when the horse crossed, and we could not do any more. I have not seen these horses straying about before.

Conclusion.

This somewhat remarkable accident occurred under the following circumstances. Two horses, belonging to a neighbouring farmer, were observed by the signalman to be straying about the high road in the neighbourhood of Ulleskelf station on the morning of the 27th November. Shortly before the arrival of the down express train from Manchester to York, which passed the station at 1.34 p.m., these two horses entered the goods yard on the down or west side of the railway, and were driven out by a porter under the directions of the station-master. The two horses then separated, one

of them crossing the line by the level-crossing, the gates of which were at that time open for the high road, while the other one turned away westwards in the opposite direction. The signalman having at 1.32 p.m. received the "Train on line" signal for the express, proceeded to close the gates across the road, and saw that the horse that had crossed the line was outside the gates on the up or east side of the railway. The signalman then left the window in order to attend to his other duties. Immediately after this the attention of a man named Claxton, who was breaking stones for the railway Company in the goods yard on the upside of the line, was called by a bystander to the fact that the horse had entered the up goods yard by the gate leading from the high road, and was recrossing the lines with the apparent intention of joining its fellow, which, as already stated, had remained on the west side of the railway. Claxton and two other men ran after the horse with the intention of driving it back, and they succeeded in getting it as far as the goods yard through which it had entered, when it doubled back and rushing between the men got once again on to the line close up to the gates on the west side, near the foot of the steps leading to the signal-cabin. The men saw the express coming through the station and were unable to do anything further to get the horse out of the way, and the signalman, whose attention had by this time been attracted, was also powerless to do more than throw his home-signal to danger just as the train was passing it. The horse was standing parallel to and between the gates and the outer rail of the down line, and facing the approaching train. The engine, which was travelling at a speed verging on 60 miles an hour, passed the horse without touching it, but the leading vehicle of the train, which was a guard's brake-van, struck the horse on the near shoulder, and forced it beneath the wheels of the train, where it was mangled in a horrible manner.

The driver had looked out on approaching the station, and seeing the line was clear, he sounded his whistle as is usual at level crossings, and then turned his attention to the injector of the engine. It is probable that he was so engaged when the horse recrossed the line for the second time. At any rate he saw nothing until he heard the blow on the van, when on looking round he saw some object, he did not know what, roll over and disappear under the train. He at once shut off steam and applied his automatic-brake, and he succeeded in stopping his train in about 350 yards. The body of the horse seems to have become entangled in the wheels of the train and to have been dragged along the line, with the result that about 200 yards of permanent-way were destroyed, six vehicles damaged, and two thrown off the rails, the body of one of which becoming separated from the under-frame was thrown over on its side in the 6-ft. way between the up and down lines.

The evidence establishes, with a fair amount of certainty, the fact that the horse gained access to the line through the goods yard gate, and that signalman Boston and labourer Claxton did all in their power to avert the disaster so soon as they became aware of the horse's presence on the line. It appears to have formed no part of anyone's duty to see that the gates of the goods yards were shut, and there is therefore no reason for attributing carelessness or neglect to any of the North Eastern Company's servants.

No blame attaches to driver Peers of the Lancashire and Yorkshire Company's train, who seems to have acted with promptitude in bringing his train to a stand, as soon as he realized that something was wrong.

The accident directs attention to the desirability of adopting every possible precaution to ensure that goods yard gates shall remain closed except when required to be opened for the purpose of allowing those who have business with the Company to gain access to the premises. How this can be best effected depends in each case upon local circumstances, and it must be admitted that, at places where business is brisk, it is difficult to suggest a satisfactory arrangement, short of the employment of gatemen, the expense of which would be serious.

I have, &c.,

H. A. Yorke,

Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Rolling Stock.

Lancashire and Yorkshire composite 394.—One end destroyed; one bottom side split; two seat-rails broken; trimming damaged; train-pipe bent; gas-pipe broken; step-iron and lamp-iron broken; end commode-handle damaged.

Lancashire and Yorkshire lavatory-composite 515.—One side of body completely destroyed; two ends destroyed; two bottom sides split from end to end; new floor required; two headstocks, one sole-bar, ten step-irons, three axle-boxes, top and bottom foot-boards on one side, all require replacing; damage to drain-pipe, gas-fittings, buffers, brake-work, and journals.

Lancashire and Yorkshire composite 335.—Two buffers bent.

Lancashire and Yorkshire third 2,034.—Three axle-boxes broken; one headstock broken; roof damaged in end compartment and two floor-boards.

Lancashire and Yorkshire third van 1,964.—Three axle-boxes broken; one draw-bar broken; two buffers bent.

Lancashire and Yorkshire third van 2,062.—Two buffers bent and vacuum release valve lever broken.

Printed copies of the above Report were sent to the North-Eastern and Lancashire and Yorkshire Railway Companies on the 9th January 1894.

SOUTH-EASTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
30th November 1893.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 10th instant, the result of my enquiry into the causes of the collision and accident which occurred on the 7th instant at Dover Town station, on the South-Eastern Railway.

In this case, just after the 2.45 p.m. up mail train had started from the mail platform at the Town station, its engine came into slight collision with the first of three empty carriages which had been left foul of the crossing through which the mail train was passing; this carriage was dragged forward with the engine, thrown off the rails, and came into collision first with one and then with a second of a central row of cast-iron columns supporting the iron and slate roof which covers the station, breaking off the first column near the bottom and throwing the second out of plumb; consequent upon this, a portion of the roof at once came down, a portion of the *débris* falling upon the engine, tender, and upon the roofs of two vans next the tender, the train having been brought to a stand after the engine had run between 30 and 40 yards from its starting point.

No personal injuries were sustained, the shelter on the engine having prevented any fragments of the falling roof from striking either the driver or fireman.

The train consisted of engine, tender, dummy van, two post-office vans, brake-van (with guard), second-class carriage, American car, first-class carriage, two composite carriages, and brake-van, 10 vehicles in all, coupled in the order stated, and fitted throughout with the automatic vacuum-brake. In it the two vans next the tender were damaged.

The empty carriage with which the engine came into collision was thrown off the rails and damaged. The portion of the roof which at once fell down was comparatively small, but this portion was almost immediately after followed by a further portion, and the extent of the roof (including what was damaged, but did not actually fall) which will have to be renewed, measures about 136 ft. in length by 92 ft. in width.

Description.

The up mail trains at Dover station start from a platform line at the south side of the mail platform and through a cross-over road at the west end of this platform on their way to the up main line. There is a carriage siding (called No. 3) at the north side of the mail platform in continuation of the line along which the mail trains run after passing through the cross-over road. This carriage siding is provided with an interlocked disc and chock-block for the protection of the cross-over road, so that when the latter is set for a train to pass through it, the chock-block ought to be across one rail of the carriage siding and prevent any vehicle running out of the siding. The

chock-block, however, was not in use when the collision occurred, it having been some time ago improperly disconnected from the disc as it had been found to interfere with shunting operations. The carriage siding is long enough to hold 12 or 13 carriages. The signal-cabin is about 150 yards west of the chock-block, and owing to the dim light under the station-roof it is next to impossible for the signalman to see whether a vehicle is foul of the cross-over road when he lowers the signal for the mail to start, and he has to depend upon the yard-foreman for informing him to that effect.

The station-roof consists of two spans of about 46 ft., each supported externally on walls, and in the centre on a row of cast-iron columns at 25 ft. central intervals, placed in the space between carriage siding No. 3 (and its continuation westward), and carriage siding No. 2, which lies to the north of No. 3. These columns are connected longitudinally at the top by cast-iron girders. The two columns which were struck were the first and second from the west end of that portion of the roof which was supported centrally on columns.

Evidence.

1. *Frederick Vidler*, signalman; 15⅓ years' service, six years signalman.—I have been three years in Archcliff Fort cabin, where I came on duty at 2 p.m. for eight hours on 7th November. At about 2.45 or 2.50 p.m. a train of empty carriages with an engine at the Folkestone end had come past the cabin to set back into No. 3 road, and after leaving some of its carriages on that road, the engine and remainder of the train then came forward past the cabin and set back into one of the other roads; during this time No. 24 crossing had not been moved. At 2.58 p.m. I received a signal for the 2.45 p.m. up mail train from the pier. I asked yard foreman Burroughs whether it was right for the mail to go. He was outside the cabin at the time. He said it was all right towards the station, and he then went up the line to get it cleared on the up side of the tunnel, and soon after came towards the cabin and told me the line was clear. On hearing this I set No. 24 crossing and No. 15 points, which stand right for No. 2 road. Meantime the train had arrived at the mail platform, and on the engine giving the whistle for the starting-signal I lowered it (No. 37) at 3.5 p.m., having previously got "Line clear" from the Channel tunnel cabin, on the up side of Shakespear tunnel. I was not able to see the carriages standing in No. 3 carriage road, it being dark from the roofing. The train started at 3.6 p.m., and the engine stopped directly after starting, and I then knew that something wrong had occurred. Burroughs was the man who was responsible for informing me that the line was clear at No. 24 crossing. No. 36 lever in my cabin should work a disc and chock-block, the normal position of the latter being across No. 3. No. 36 has not been in use for more than two years, as it interfered with the free working of the yard on the up side. The signal frame at the pier end of the platform controls Nos. 37 and 52 signals.

2. *William Burroughs*, yard foreman; 13 years' service.—I have been yard foreman at Dover for 2½ years. I came on duty at 7 a.m. on November 7th to remain till 6 p.m. I was superintending the shunting of an empty carriage train, which had formed the down train due at 1.15 p.m. After making several shunts it became necessary to leave the rear three vehicles on No. 3 carriage road. For this purpose, the engine and five or six vehicles set back past the signal-cabin, and left the three rear vehicles in this road, and then again went forward and set back into No. 1 road. I had not accompanied the train into No. 3 carriage road, but it was in charge of shunter Bushell, and I was standing on the ground in front of the signal-cabin. On receiving a signal from Bushell, who was standing at the Folkestone end of the shed-roof, that the line was clear from the cabin towards the station, I went to see that it was also clear on the up side of the cabin, and on ascertaining that it was clear there, I returned to the signal-cabin and told the signalman that it was all right through the tunnel. I was still standing in front of the signal-cabin, but unable to see the carriages standing on No. 3 road on account of the darkness under the roof, when the mail started, and immediately after this I heard a crash and at once went up to see what had happened. I found the engine in collision with one of the carriages which had been placed in No. 3 road. The engine wheels were none of them through the crossing, but on the rails, the carriage being off the rails and leaning against the last column supporting the shed roof, this column being broken at the bottom and leaning over towards the right, with part of the roof resting on the cab of the engine. I saw Bushell when I got to the spot, and he said he had left the carriages clear of the crossing and they must have run out after he had left them. There was an easterly wind blowing at the time, but not a very strong wind.

3. *Henry Bushell*, assistant shunter; 21 years' service.—I have been assistant shunter at Dover station for the last 12 years, and I commenced work on the 7th November at 6 a.m. for 12 hours, with time off for meals. I was engaged in shunting the empty carriage train between 2 or 3 o'clock. After making some previous shunts the train then consisting of engine and tender, brake-van, and three carriages set back from the signal-cabin along No. 2 road to leave the three carriages in No. 3 carriage siding; I was riding on the foot-board on the land side of the carriage next the van. We went back into the siding, which holds 12 or 13 carriages, (there being already three carriages in the road), and I accompanied the three I had to leave as far as the Folkestone end of the shed, having unhooked them from the van near the signal-cabin. The carriages stopped of themselves, as I believed, and when I left them I am confident that the carriage next Folkestone was on the pier side of the chock-block; I left the carriages at the up end of No. 24 points, after which I went into No. 2 road to unhook the engine from the van. I saw no more of the three carriages, but went over to the arrival platform, to wait for the down train due at 3.5 p.m., at about 2.50 p.m. I gave Burroughs a signal to the effect that all was clear for the up mail, as I thought it was. He was standing at the time just below the signal-cabin. I can only suppose that the carriages had not stopped when I thought they had, but must have struck the carriages already in the siding and rebounded so as to foul the crossing. I ought to have gone along with the carriages and seen that they were safe in the carriage before leaving them. I was aware the Scotch block was not in use. I was not pressed for time after leaving the empty carriages. There is a standing order that carriages should be scotched or braked in the carriage road.

There was a brake on the vehicle which was run into.

4. *Thomas London*, driver; 20 years' service, 12 years driver.—I commenced work on the 7th November at 7.35 a.m., to sign off about 8.30 p.m., with two intervals of rest of about an hour each. I was driver of the 2.45 p.m. mail train, my engine being a tender-engine, running chimney in front, with a train of 11 vehicles. The engine has eight wheels, with a leading bogie and four coupled wheels; and the automatic vacuum-baake was fitted throughout the train. We left the pier between 3.3 and 3.4 p.m., and stopped at the mail platform, with the chimney of the engine opposite the starting-signal. At about 3.5½ p.m. I whistled for the signal, which was at once lowered, and I started. On stopping at the starting-signal I had noticed the vehicles standing on the carriage-siding, and my impression was that the front one might have been two yards further towards Folkestone, and still have been clear of the crossing through which I had to pass, but it was outside the chock-block. My place is on the right side of the foot-plate, and having satisfied myself, as I thought, that the carriage was clear of the crossing, I did not notice it again until, after my engine had moved forward about 20 yards, the right corner of the buffer-beam came into collision with the left foot-board of the empty carriage. I was not conscious that I had struck the carriage till the end door came inside the cab. I then at once closed the regulator, and applied the brake, and stopped in another 12 yards. While we were stopping the roof began falling on the cab of the engine, which grazed me and the fireman, the tender being covered with *débris*. No wheels left the rails in my train. I saw the column first struck by the carriage broken into some pieces, and then the girders fell. In about 10 minutes a second fall took place before the train was moved. Neither I nor the fireman was hurt. I think that the carriages may have moved forward from the vibration of my train having released the vacuum-brake on them after I had seen them, as I thought, clear.

5. *William Ashdown*, fireman; 13 years' service, six years fireman.—I have been seven months with London, and I was with him on November 7th, when my hours were the same as his. I agree with his statement, except that I did not see the exact position of the carriages before starting.

6. *William Reynolds*, guard; 28 years' service, 24 years guard. I commenced work at 8 a.m. on November 7th, to remain till 5.3 p.m. I was in charge of the 2.45 p.m. up mail train, which consisted of engine and tender, dummy van, two post-office vans, brake-van (in which I rode), second-class American car, first-class, two composites, and two vans, (11 in all from the pier, but the rear van was detached at the station), all fitted with the automatic vacuum-brake. We left the pier at 3.2 p.m. and remained two minutes at the station and started at 3.6 p.m. I had not noticed the carriages in the siding before starting, and the collision took me unawares, there being no shock. The roof fell on the dummy van at once, and afterwards on the first post-office van. After a detention of about 47 minutes the train was taken back to the pier, and then by the London, Chatham, and Dover line, and the Dover and Deal line to London.

Conclusion.

This collision between the up mail train and an empty carriage, followed by the fall of a portion of the station roof, owing to the empty carriage having been forced against and thus having damaged two cast-iron columns which formed the central support of the roof, was immediately due to neglect of duty on the part of assistant shunter Bushell. Bushell was in charge of the shunting of an empty carriage train, the last operation consisting in the disposal of three carriages in No. 3 carriage siding. These carriages were duly shunted by an engine back into the siding at about 2.50 p.m., and Bushell instead of accompanying them back into the siding and leaving them there, in accordance with orders, either scotched or braked and clear of the crossing through which the mail had to pass, contented himself with seeing them run back, being confident that the carriage next Folkestone was well clear of the crossing before he signalled to the yard foreman, who was standing beside the signal-cabin (about 150 yards from the crossing) that the line was clear for the up mail. Bushell after this went away to attend to other duties on the down platform. Bushell has been 21 years in the service, and assistant shunter at Dover for the last 12 years. He had come on duty at 6 a.m. for 12 hours with time off for meals, and had therefore been at work about nine hours at the time of the collision.

On hearing from the foreman porter that the line was clear, the signalman set the crossing and lowered the starting-signal for the mail train which had arrived at the mail platform soon after 3 p.m.

London, the driver of the mail train, on drawing up at the starting-signal, says that he noticed the position of the first of the empty carriages on the siding, and was under the impression that it might have been two yards further west and still leave room for his train to pass it. On the starting-signal being lowered London put his train in motion without having again looked at the empty carriages, and had gone forward a short distance when he became aware that the right corner of the buffer-beam of his engine had come into collision with the left foot-board of the first empty carriage. He then stopped as quickly as possible, but not before the carriage had been squeezed off the rails and forced against the columns on the right of the carriage siding, the roof then at once falling on the cab of the engine, on the tender, and on the vans next to it. London's opinion is that the carriage must have moved forward after he had seen it, as he supposed, clear of the crossing. He seemed to be a very intelligent man, and I cannot doubt his statement that there seemed room for him to

pass the carriage when he looked at it not more than two minutes before starting; but what happened must, I think, have been this, viz., that the three empty carriages, when kicked back into the carriage siding, ran along it until they struck three other carriages which were already standing in it against the buffer-stops; that they then rebounded, came slowly back along the siding and were still creeping forward at so slow a pace that their motion was hardly perceptible when London observed them, and that during the two minutes which then elapsed before the train started they had crept forward (aided possibly by an easterly wind which was said to be blowing at the time) so that the leading end of the first carriage had just come foul of the crossing when the engine of the mail train struck it.

London would of course have acted more prudently had he again looked at the carriages before starting to see that the road was clear, but under the circumstances I can hardly think he is much to be blamed. He has been 20 years in the service and 12 years a driver. He had commenced work at 7.35 a.m. to sign off at about 8.30 p.m., with two intervals of rest of about one hour each. This is a longer day's work than is proper in the case of a man having the responsible duties of a driver. At the time of the collision he had been on duty about 7½ hours.

Though neglect of duty on the part of assistant shunter Bushell was the immediate cause of the collision and the consequent fall of the roof, the collision would probably not have occurred had the working of the interlocked chock-block on the carriage siding not been most improperly dispensed with, because it was found to interfere with the freedom of shunting about the station yard. This chock-block (together with some others) had been provided upon the requirement of the inspecting officer of the Board of Trade after an inspection of some alterations at the station in July 1880, and it is now hard to trace who is directly responsible for the abandonment of its use. The disuse of a safeguard of this description was a most improper proceeding, and it could hardly have taken place under a proper system of supervision. Had the chock-block been properly worked after the empty carriages had been knocked back into the siding it would have prevented their running out foul of the crossing through which the mail train had to pass.

If the use of the chock-block was found, as stated, to interfere unduly with the shunting in the station yard, the matter should have been represented to the Board of Trade, when means would have been suggested for remedying the inconvenience without depriving the mail departure line of the safeguard provided by the chock-block.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) C. S. Hutchinson,
Major-General, R.E.

Printed copies of the above Report were sent to the Company on the 2nd January 1894.

RETURNS

OF

ACCIDENTS AND CASUALTIES

AS REPORTED TO THE BOARD OF TRADE BY THE SEVERAL RAILWAY COMPANIES IN THE UNITED KINGDOM,

During the Three Months ending 31st March 1894,

In pursuance of the Regulation of Railways Act (1871), 34 & 35 Vict. cap. 78;

TOGETHER WITH

REPORTS OF THE INSPECTING OFFICERS OF THE RAILWAY DEPARTMENT TO THE BOARD OF TRADE

UPON

CERTAIN ACCIDENTS

Which were inquired into.

Presented to both Houses of Parliament by Command of Her Majesty.

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TABLE OF CONTENTS.

Page

SUMMARY of ACCIDENTS and CASUALTIES reported to the BOARD of TRADE during the Three Months ending 31st March 1894 - - - - - - -

TABLES:

No. 1. General Total.—Number of Persons reported as killed or injured on the Railways of the United Kingdom, distinguishing between Passengers, Servants of the Companies or of Contractors, and other Persons; and distinguishing also in the case of the two former Classes between Accidents caused by accidents to trains, rolling-stock, permanent-way, &c., and Accidents happening otherwise - - - - - - - - -

No. 2. Number of Persons reported as killed or injured in the United Kingdom, by the travelling of trains or the movement of vehicles used exclusively upon Railways, distinguishing between Passengers, Servants of Railway Companies, and other Persons; and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury -

No. 3. Accidents to Trains, Rolling-Stock, Permanent-Way, &c. on the Railways in the United Kingdom, distinguishing the different Classes of Accidents, and the Number of Passengers and others, and of Servants of Railway Companies, killed or injured in each Class of Accident -

No. 4. Accidents to Trains, Rolling-Stock, Permanent-Way, &c. on the Railways in the United Kingdom, distinguishing the different Classes of Accidents, the different Railways on which the same have occurred, and the Number of Passengers and others, and of Servants of Railway Companies, killed or injured on each Railway by those Accidents - - -

No. 5. Number of Servants of Railway Companies and Contractors reported as killed or injured on the Railways in the United Kingdom, by the travelling of trains or the movement of vehicles used exclusively upon Railways, distinguishing the Number which have occurred on each Railway or System of Railway, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - - - -

No. 6. Table showing the different occupations of Servants of Railway Companies and Contractors who were killed or injured, and classifying their injuries as far as practicable -

No. 7. Number of Persons reported as having been killed or injured whilst upon the Companies' premises, by accidents in which the movement of vehicles used exclusively upon Railways was not concerned, distinguishing between Passengers, Servants of Companies, and other Persons; and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - - - - - - - -

REPORTS ON ACCIDENTS INQUIRED INTO - - - - - -

Summary of Accidents and Casualties which have been reported to the Board of Trade as having occurred upon the Railways in the United Kingdom during the Three Months ending 31st March 1894.

I.—Accidents to Trains, Rolling-Stock, Permanent-Way, &c.

Accidents to trains, rolling-stock, permanent-way, &c. caused the death of one person and injury to 81 persons, viz. :—

	Killed.	Injured.	*Total for the corresponding Period in 1893.*	
			Killed.	*Injured.*
Passengers	—	62	—	*121*
Servants of companies	1	19	—	*17*
Total	1	81	—	*138*

During the three months there were reported 4 collisions between passenger trains or parts of passenger trains, by which 13 passengers and 1 servant were injured; 9 collisions between passenger trains and goods or mineral trains, &c., by which 41 passengers and 6 servants were injured; 5 collisions between goods trains or parts of goods trains, by which 3 passengers and 5 servants were injured; 11 cases of passenger trains or parts of passenger trains leaving the rails, by which 1 servant was injured; 3 cases of goods trains or parts of goods trains leaving the rails, by which 2 servants were injured; 4 cases of trains running into stations or sidings at too high a speed, by which 4 passengers were injured; 37 cases of trains running over cattle* or other obstructions on the line, by which 1 passenger and 1 servant were injured; 4 cases of the failure of machinery, springs, &c., of engines, by which 1 servant was injured; 42 failures of axles, by which 1 servant was injured; and 2 failures of couplings, by which 1 servant was killed and 1 servant was injured.

The following cases were also reported, but they involved no personal injury:— 9 cases of trains running through gates at level crossings; 1 case of the bursting of boilers or tubes, &c., of engines; 54 failures of tyres; 1 case of the failure of a rope used in working inclines; 1 case of the failure of a bridge; 84 failures of rails; 5 slips in cuttings or embankments; and 2 fires at stations.

Of the 54 tyres which failed, 3 were engine-tyres, 3 were tender-tyres, 1 was a van-tyre, and 47 were waggon-tyres; of the waggons, 34 belonged to owners other than the Railway Companies; 26 tyres were made of iron, 27 of steel, and in 1 case the material was not stated; 2 of the tyres were fastened to the wheel by Mansell's patent method; 2 by Gibson's patent method; 42 by bolts or rivets, 2 of which left their wheels when they failed; 8 by other methods, 1 of which left its wheel when it failed; 10 tyres broke at rivet-holes, 24 in the solid, and 18 split longitudinally or bulged; and 2 tyres which failed did not break.

Of the 42 axles which failed, 25 were engine axles, viz., 22 crank or driving, and 3 leading or trailing; 3 were tender axles; and 14 were waggon axles; of the waggons, 4 belonged to owners other than the Railway Companies. Of the 22 crank or driving axles, 9 were made of iron and 13 of steel. The average mileage of 8 crank or driving axles made of iron was 250,757 miles, and of 13 crank or driving axles made of steel 344,842 miles.

* During the three months, 7 horses, 11 beasts and cows, and 6 sheep were run over and killed, and 2 horses were injured.

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Of the 84 rails which broke, 23 were double-headed, 49 were single-headed, 2 were of the bridge pattern, and 10 were Vignoles' rails; of the double-headed rails 11 had been turned; 5 rails were made of iron and 79 of steel.

II.—Accidents to Passengers from Causes other than Accidents to Trains, Rolling-Stock, Permanent-Way, &c., including Accidents from their own want of Caution or Misconduct; Accidents to Persons passing over Level-Crossings; Trespassers; and Others.

Of the 152 persons killed and 246 injured in this division, 30 of the killed and 185 of the injured were passengers. Of these 9 were killed and 13 injured by falling between carriages and platforms, viz., 7 killed and 8 injured when getting into, and 2 killed and 5 injured when alighting from, trains; 2 were killed and 114 injured by falling on to platforms, ballast, &c., viz., 20 injured when getting into, and 2 killed and 94 injured when alighting from, trains; 10 were killed and 5 injured whilst passing over the line at stations; 21 were injured by the closing of carriage doors; 5 were killed and 11 injured by falling out of carriages during the travelling of trains; and 4 were killed and 21 injured from other causes. 16 persons were killed and 3 injured whilst passing over railways at level-crossings, viz., 6 killed and 2 injured at public level-crossings, 1 killed at an occupation-crossing, and 9 killed and 1 injured at foot-crossings. 64 persons were killed and 36 injured when trespassing on the railways; 27 persons committed suicide on railways; and of other persons not specifically classed, but mostly private people having business on the companies' premises, 15 were killed and 22 injured.

III.—Accidents to Servants in the Employ of Railway Companies or Contractors, caused by the Travelling of Trains or the Movement of Vehicles used exclusively upon Railways.

During the three months there were 131 servants of companies or contractors reported as having been killed and 716 injured, in addition to those included in Division I. Of these 6 were killed and 80 injured whilst coupling or uncoupling vehicles; 2 were injured by coming in contact, whilst riding on vehicles during shunting, with other vehicles, &c. standing on adjacent lines; 7 were injured whilst passing over or standing upon buffers during shunting; 3 were killed and 58 injured in getting on or off, or by falling off engines, waggons, &c. during shunting; 2 were killed and 42 injured whilst braking, spragging, or chocking wheels; 1 was killed and 7 injured whilst attending to ground-points, marshalling trains, &c.; 8 were killed and 76 injured whilst moving vehicles by capstans, turntables, props, &c. during shunting, and 29 were killed and 133 injured by various other accidents during shunting operations; 2 were killed and 13 injured by falling off engines, &c. during the travelling of trains; 2 were killed and 11 injured by coming in contact with over-bridges or erections on the sides of the line during the travelling of trains; 5 were killed and 27 injured whilst getting on or off engines, vans, &c. during the travelling of trains; 1 was killed and 114 injured whilst attending to, or by the failure of machinery, &c. of engines in steam; 11 were killed and 18 injured whilst working on the permanent-way, sidings, &c.; 2 were killed whilst attending to level-crossing gates; 43 were killed and 57 injured whilst walking, crossing, or standing on the line on duty; 3 were killed and 18 injured by being caught between vehicles; 5 were killed and 13 injured by falling or being caught between trains and platforms, walls, &c.; 6 were killed and 3 injured whilst walking, &c. on the line on the way home or to work; and 2 were killed and 37 injured from various other causes.

Altogether, the number of persons killed and injured on railways in the United Kingdom in the course of public traffic, during the three months ending 31st March 1894, as reported to the Board of Trade, was as follows :—

——	Killed.	Injured.	*Total for the corresponding Period in 1893.*		Increase.		Decrease.	
			Killed.	*Injured.*	Killed.	Injured.	Killed.	Injured.
Passengers :								
From accidents to trains, rolling-stock, permanent-way, &c.	—	62	—	*121*	—	—	—	59
By accidents from other causes -	30	185	*23*	*170*	7	15	—	—
Servants of companies or contractors :*								
From accidents to trains, rolling-stock, permanent-way, &c.	1	19	—	*17*	1	2	—	—
By accidents from other causes -	131	716	*121*	*741*	10	—	—	25
Persons passing over railways at level-crossings.	16	3	*8*	*4*	8	—	—	1
Trespassers (including suicides) - -	91	36	*75*	*38*	16	—	—	2
Other persons not coming in above classification.	15	22	*7*	*14*	8	8	—	—
Total - - - -	284	1,043	*234*	*1,105*	50	—	—	62

* Of contractors' servants 4 were killed and 3 injured.

Note.—In addition to the above, the Railway Companies have reported to the Board of Trade, in pursuance of the 6th Section of the Regulation of Railways Act, 1871, the following accidents which occurred upon their premises, but in which the movement of vehicles used exclusively upon railways was not concerned, namely :—37 passengers injured whilst ascending or descending steps at stations; 14 injured by being struck by barrows, falling over packages, &c. on station platforms; 7 injured by falling off platforms; and 1 killed and 21 injured from other causes. Of servants of companies or contractors, 1 killed and 348 injured whilst loading, unloading, or sheeting waggons; 1 killed and 64 injured whilst moving or carrying goods in warehouses, &c.; 22 injured whilst working at cranes or capstans; 1 killed and 58 injured by the falling of waggon-doors, lamps, bales of goods, &c.; 1 killed and 63 injured by falling off, or when getting on or off, stationary engines or vehicles; 4 killed and 106 injured by falling off platforms, ladders, scaffolds, &c.; 100 injured by stumbling whilst walking on the line or platforms; 43 injured whilst attending to stationary engines in sheds; 12 injured by being trampled on or kicked by horses; 127 injured whilst working on the line or in sidings; and 1 killed and 107 injured from various other causes. Of other persons, most of whom were transacting business on the companies' premises, 4 were killed and 39 injured—making a total in this class of accidents of 14 persons killed and 1,168 injured.

Thus the total number of personal accidents reported to the Board of Trade by the several Railway Companies during the three months amounts to 298 persons killed and 2,211 injured.

TABLE No. 1.

GENERAL TOTAL.

NUMBER of PERSONS reported, during the Three Months ending 31st March 1894, as KILLED or INJURED on the RAILWAYS of the UNITED KINGDOM, distinguishing between PASSENGERS, SERVANTS of the COMPANIES or of CONTRACTORS, and OTHER PERSONS; and distinguishing also in the case of the Two former Classes between ACCIDENTS caused by ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c., and ACCIDENTS happening otherwise.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, rolling-stock, permanent-way, &c. -	–	51	–	11	–	–	–	62
By accidents from other causes, including accidents from their own want of caution or misconduct - - - -	22	174	6	11	2	–	30	185
SERVANTS:—								
From accidents to trains, rolling-stock, permanent-way, &c. -	–	16	1	3	–	–	1	19
By accidents from other causes, including accidents from their own want of caution or misconduct - - - -	108	638	18	72	5	6	131	716
OTHER PERSONS:—								
Whilst passing over railways at level-crossings - -	16	3	–	–	–	–	16	3
Trespassers - - - -	44	28	19	7	1	1	64	36
Suicides - - - - -	22	–	4	–	1	–	27	–
Miscellaneous, not included in either of the above - -	13	16	–	5	2	1	15	22
TOTAL - -	225	926	48	109	11	8	284	1,043

N.B.—The Board of Trade state the cause of accident as returned by the Companies, but do not guarantee or otherwise adopt the statement, except in cases where an official inquiry has been held.

TABLE No. 2.

NUMBER of PERSONS reported, during the Three Months ending 31st March 1894, as KILLED or INJURED in the UNITED KINGDOM by the TRAVELLING of TRAINS or the MOVEMENT of VEHICLES used exclusively upon RAILWAYS, distinguishing between PASSENGERS, SERVANTS of RAILWAY COMPANIES, and OTHER PERSONS, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, &c., *see Table No. 3*	–	51	–	11	–	–	–	62
From falling between trains and platforms	7	13	2	–	–	–	9	13
From falling on to the platform, ballast, &c. when getting into or out of trains	1	106	1	8	–	–	2	114
Whilst crossing the line at stations	9	5	–	–	1	–	10	5
By the closing of carriage doors	–	21	–	–	–	–	–	21
From falling out of carriages during the travelling of trains	2	9	2	2	1	–	5	11
By other accidents	3	20	1	1	–	–	4	21
TOTAL	22	225	6	22	2	–	30	247
SERVANTS:—								
From accidents to trains, &c., *see Table No. 3*	–	16	1	3	–	–	1	19
Whilst coupling or uncoupling vehicles	4	70	2	9	–	1	6	80
By coming in contact, whilst riding on vehicles during shunting, with other vehicles, &c. standing on adjacent lines	–	2	–	–	–	–	–	2
Whilst passing over or standing upon buffers during shunting	–	3	–	3	–	1	–	7
When getting on or off, or falling off, engines, waggons, &c. during shunting	2	53	1	5	–	–	3	58
Whilst braking, spragging, or chocking wheels	1	34	1	8	–	–	2	42
Whilst attending to ground-points, marshalling trains, &c.	1	7	–	–	–	–	1	7
Whilst moving vehicles by capstans, turn-tables, props, &c. during shunting	7	73	1	2	–	1	8	76
By other accidents during shunting operations, not included in the preceding	24	122	3	11	2	–	29	133
From falling off engines, &c. during the travelling of trains	1	10	–	3	1	–	2	13
By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains	2	8	–	3	–	–	2	11
When getting on or off engines, vans, &c. during the travelling of trains	3	22	–	4	2	1	5	27
Whilst attending to, or by the failure of, machinery, &c. of engines in steam	1	107	–	7	–	–	1	114
Whilst working on the permanent-way, sidings, &c.	10	12	1	6	–	–	11	18
Whilst attending to gates at level-crossings	1	–	1	–	–	–	2	–
Whilst walking, crossing, or standing on the line on duty	38	50	5	6	–	1	43	57
From being caught between vehicles	2	17	1	1	–	–	3	18
From falling or being caught between trains and platforms, walls, &c.	5	11	–	2	–	–	5	13
Whilst walking, &c. along the line on the way home or to work	6	2	–	1	–	–	6	3
Miscellaneous	–	35	2	1	–	1	2	37
TOTAL	108	654	19	75	5	6	132	735
OTHER PERSONS:—								
Whilst passing over railways at level-crossings	16	3	–	–	–	–	16	3
Trespassers	44	28	19	7	1	1	64	36
Suicides	22	–	4	–	1	–	27	–
Miscellaneous	13	16	–	5	2	1	15	22
TOTAL	95	47	23	12	4	2	122	61
SUMMARY:—								
Passengers	22	225	6	22	2	–	30	247
Servants	108	654	19	75	5	6	132	735
Other persons	95	47	23	12	4	2	122	61
TOTAL ALL CLASSES	225	926	48	109	11	8	284	1,043

TABLE No. 3.

DENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c. reported, during the Three Months ending 31st March 1894, as having occurred on the RAILWAYS in the UNITED KINGDOM, distinguishing the different Classes of Accident, and the Number of Passengers and others, and of Servants of Railway Companies, KILLED or INJURED in each Class of Accident.

—	NUMBER OF CASES.				NUMBER OF PASSENGERS AND OTHERS.								NUMBER OF SERVANTS.							
	England and Wales.	Scotland.	Ireland.	United Kingdom.	England and Wales.		Scotland.		Ireland.		United Kingdom.		England and Wales.		Scotland.		Ireland.		United Kingdom.	
					Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
ions between passenger ns or parts of passenger ns - - - -	4	–	–	4	–	13	–	–	–	–	–	13	–	1	–	–	–	–	–	1
ons between passenger ns and goods or mineral as, engines, and vehicles ding foul of the line -	6	2	1	9	–	30	–	11	–	–	–	41	–	4	–	2	–	–	–	6
ons between goods trains arts of goods trains -	5	–	–	5	–	3	–	–	–	–	–	3	–	5	–	–	–	–	–	5
coming in contact with ections from other trains elling on parallel lines -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ger trains or parts of enger trains leaving the - - - -	10	–	1	11	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
trains or parts of goods s, engines, &c. leaving ails - - -	3	–	–	3	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	2
or engines travelling in rong direction through s - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
running into stations idings at too high a l - - - -	3	–	1	4	–	4	–	–	–	–	–	4	–	–	–	–	–	–	–	–
running over cattle or obstructions on the line	27	8	2	37		1	–	–	–	–	–	1	–	–	–	1	–	–	–	1
running through gates vel-crossings - -	9	–	–	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
rsting of boilers or , &c. of engines -	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ilure of machinery, gs, &c. of engines -	3	1	–	4	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
ure of tyres - -	49	5	–	54	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
„ wheels -	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
„ axles - -	25	17	–	42	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
„ brake apparatus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
„ couplings -	1	1	–	2	–	–	–	–	–	–	–	–	–	1	1	–	–	–	1	1
„ ropes used in working inclines	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
„ tunnels, bridges, viaducts, culverts, &c.	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ails - - -	74	5	5	84	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ding of portions of nent-way - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
cuttings or embank- - - - -	4	1	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ains - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
stations or involving to bridges or viaducts	2	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
idents - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL -				-	–	51	–	11	–	–	–	62	–	16	1	3	–	–	1	19

TABLE No. 4.

ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c. on the RAILWAYS in the UNITED KINGDOM, reporte
RAILWAYS on which the same have occurred, and the Number of Passengers and others, and o

NAME OF COMPANY.	Collisions between passenger trains or parts of passenger trains.	Collisions between passenger trains and goods or mineral trains, engines, &c.	Collisions between goods trains or parts of goods trains.	Trains coming in contact with projections from other trains travelling on parallel lines.	Passenger trains or parts of passenger trains leaving the rails.	Goods trains or parts of goods trains, engines, &c. leaving the rails.	Trains or engines travelling in the wrong direction through points.	Trains running into stations or sidings at too high a speed.	Trains running over cattle or other obstructions on the line.	Trains running through gates at level-crossings.	The bursting of boilers or tubes, &c. of engines.	The failure of machinery, springs, &c. of engines.	The failure of tyres
ENGLAND AND WALES.													
Cambrian	–	–	1	–	–	1	–	–	1	–	–	–	–
Cheshire Lines	–	1	–	–	–	–	–	–	–	–	–	–	–
Furness	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Eastern	1	–	–	–	–	–	–	1	2	–	–	1	3
Great Northern	–	–	–	–	–	–	–	–	1	–	–	–	1
Great Western	–	1	–	–	3	–	–	–	4	7	–	1	–
Lancashire and Yorkshire	–	1	1	–	2	–	–	–	3	–	1	–	–
London and North-Western	1	–	2	–	–	–	–	1	–	–	–	–	4
London and North-Western and Great Western Joint.	–	–	–	–	1	–	–	–	1	–	–	–	–
London and South-Western	–	–	–	–	–	1	–	–	1	2	–	–	2
London, Brighton, and South Coast.	–	–	–	–	–	–	–	1	1	–	–	1	–
London, Chatham, and Dover	–	–	1	–	–	–	–	–	–	–	–	–	–
Manchester and Milford	–	–	–	–	1	–	–	–	–	–	–	–	–
Manchester, Sheffield, and Lincolnshire.	–	–	–	–	–	–	–	–	–	–	–	–	–
Maryport and Carlisle	–	–	–	–	–	–	–	–	–	–	–	–	–
Metropolitan	–	–	–	–	–	–	–	–	–	–	–	–	–
Metropolitan District	–	–	–	–	1	–	–	–	–	–	–	–	–
Midland	–	1	–	–	–	–	–	–	1	–	–	–	3
Midland and Great Western Joint.	–	1	–	–	–	–	–	–	–	–	–	–	–
North-Eastern	1	1	–	–	1	–	–	–	12	–	–	–	–
North London	–	–	–	–	–	1	–	–	–	–	–	–	1
North Staffordshire	–	–	–	–	–	–	–	–	–	–	–	–	–
North Wales Narrow Gauge	–	–	–	–	1	–	–	–	–	–	–	–	–
Preston, Wyre, and North Union Joint.	–	–	–	–	–	–	–	–	–	–	–	–	1
South-Eastern	1	–	–	–	–	–	–	–	–	–	–	–	–
Private Owners	–	–	–	–	–	–	–	–	–	–	–	–	34
TOTAL, ENGLAND AND WALES	4	6	5	–	10	3	–	3	27	9	1	3	49

TABLE No. 4.

ring the Three Months ending 31st March 1894, distinguishing the different CLASSES of ACCIDENTS, the different Servants of Railway Companies, KILLED or INJURED on each Railway by those Accidents.

The ilure of heels.	The failure of axles.	The failure of brake apparatus.	The failure of couplings.	The failure of ropes used in working inclines.	The failure of tunnels, bridges, viaducts, or culverts.	Broken rails.	The flooding of portions of permanent-way.	Slips in cuttings or embankments.	Fire in trains.	Fire at stations or involving injury to bridges or viaducts.	Other accidents.	Number of Passengers and others.		Number of Servants.		Total all Classes.	
												Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	4	–	5
–	1	–	–	–	–	–	–	–	–	–	–	–	25	–	2	–	27
–	1	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	1	3	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	7	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	8	–	1	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	2	–	–	–	–	–	–	5	–	2	–	7
–	13	–	–	–	–	13	–	–	–	–	–	–	18	–	3	–	21
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	4	–	2	–	1	–	–	–	–	1	–	1
–	–	–	–	–	–	3	–	1	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	16	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	6	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	4	–	–	1	–	3	–	–	–	1	–	–	1	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	25	–	1	1	1	74	–	4	–	2	–	–	51	–	16	–	67

[Continued on next page.

TABLE No. 4.—Number of Accidents to Trains

NAME OF COMPANY.	Collisions between passenger trains or parts of passenger trains.	Collisions between passenger trains and goods or mineral trains, engines, &c.	Collisions between goods trains or parts of goods trains.	Trains coming in contact with projections from other trains travelling on parallel lines.	Passenger trains or parts of passenger trains leaving the rails.	Goods trains or parts of goods trains, engines, &c. leaving the rails.	Trains or engines travelling in the wrong direction through points.	Trains running into stations or sidings at too high a speed.	Trains running over cattle or other obstructions on the line.	Trains running through gates at level-crossings.	The bursting of boilers or tubes, &c. of engines.	The failure of machinery, springs, &c. of engines.	The failure of tyres.
SCOTLAND.													
Caledonian	–	–	–	–	–	–	–	–	4	–	–	–	2
City of Glasgow Union	–	–	–	–	–	–	–	–	1	–	–	–	–
Glasgow and South-Western	–	–	–	–	–	–	–	–	1	–	1	–	–
Glasgow, Barhead, and Kilmarnock.	–	–	–	–	–	–	–	–	–	–	–	1	–
Great North of Scotland	–	–	–	–	–	–	–	–	–	–	–	–	1
Highland	–	1	–	–	–	–	–	–	–	–	–	–	1
North British	–	1	–	–	–	–	–	–	2	–	–	–	1
Private Owners	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL, SCOTLAND	–	2	–	–	–	–	–	–	8	–	–	1	5
IRELAND.													
Belfast and Northern Counties	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Northern of Ireland	–	–	–	–	1	–	–	1	–	–	–	–	–
Great Southern and Western	–	–	–	–	–	–	–	–	–	–	–	–	–
Midland Great Western	–	1	–	–	–	–	–	–	–	–	–	–	–
Waterford and Limerick	–	–	–	–	–	–	–	–	2	–	–	–	–
TOTAL, IRELAND	–	1	–	–	1	–	–	1	2	–	–	–	–
TOTAL, UNITED KINGDOM	**4**	**9**	**5**	**–**	**11**	**3**	**–**	**4**	**37**	**9**	**1**	**4**	**54**

ling-Stock, Permanent-Way, &c.—*continued.*

he ure of eels.	The failure of axles.	The failure of brake apparatus.	The failure of couplings.	The failure of ropes used in working inclines.	The failure of tunnels, bridges, viaducts, or culverts.	Broken rails.	The flooding of portions of permanent-way.	Slips in cuttings or embankments.	Fire in trains.	Fire at stations or involving injury to bridges or viaducts.	Other accidents.	Number of Passengers and others.		Number of Servants.		Total all Classes.	
												Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
–	3	–	–	–	–	2	–	1	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	1	–
–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	2	–	3
–	12	–	–	–	–	3	–	–	–	–	–	–	10	–	–	–	10
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	17	–	1	–	–	5	–	1	–	–	–	–	11	1	3	1	14
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–
1	**42**	–	**2**	**1**	**1**	**84**	–	**5**	–	**2**	–	–	**62**	**1**	**19**	**1**	**81**

TABLE No. 5.

NUMBER of SERVANTS of RAILWAY COMPANIES and CONTRACTORS reported, during the the Three Months ending 31
used exclusively upon RAILWAYS, distinguishing the Number which have occurred on each Railway or System

NAME OF COMPANY.	From accidents to trains, &c. *See* Table No. 4.		Whilst coupling or uncoupling vehicles.		By coming in contact whilst riding on vehicles during shunting with other vehicles, &c. standing on adjacent lines.		Whilst passing over, or standing upon, buffers during shunting.		When getting on or off, or falling off, engines, waggons, &c. during shunting.		Whilst braking, spragging, or chocking wheels.		Whilst attending to ground-points, marshalling trains, &c.		Whilst moving vehicles by capstans, turntables, props, &c. during shunting.		By other accidents during shunting operations not include in the preceding	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injure
ENGLAND AND WALES.																		
Barry	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cambrian	–	4	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Cheshire Lines	–	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	2	2
Furness	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Great Eastern	–	1	–	–	–	–	–	–	–	2	–	–	–	–	–	–	1	3
Great Northern	–	–	–	3	–	–	–	–	–	1	–	7	–	–	–	–	1	5
Great Northern and Great Eastern Joint.	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Great Western	–	–	–	10	–	–	–	–	–	8	–	8	–	–	2	12	1	10
Hull, Barnsley, and West Riding	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Lancashire and Yorkshire	–	2	1	12	–	–	–	1	1	13	–	5	1	5	1	9	5	40
Lancashire and Yorkshire and London and North-Western Joint.	–	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–
London and India Docks	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
London and North-Western	–	3	–	15	–	–	–	–	–	13	–	7	–	–	1	30	4	25
London and North-Western and Great Western Joint.	–	–	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	1
London and South-Western	–	1	–	3	–	1	–	1	–	4	–	–	–	–	–	2	–	7
London, Brighton, and South Coast	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	1	1	2
London, Chatham, and Dover	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
London, Tilbury, and Southend	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Macclesfield Committee	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Manchester, Sheffield, and Lincolnshire	–	–	–	4	–	1	–	–	–	2	1	3	–	–	–	1	2	3
Metropolitan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Metropolitan District	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Midland	–	–	–	1	–	–	–	–	–	3	–	1	–	–	1	6	4	6
Midland and Great Northern Joint	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North and South-Western Junction	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North-Eastern	–	–	–	9	–	–	–	1	–	5	–	2	–	2	2	10	1	9
North London	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
North Staffordshire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rhymney	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Somerset and Dorset	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
South-Eastern	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	2
Stalybridge Joint Station	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Taff Vale	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–
TOTAL, ENGLAND AND WALES	–	16	4	70	–	2	–	3	2	53	1	34	1	7	7	73	24	122

TABLE No. 5.

rch 1894, as KILLED or INJURED in the UNITED KINGDOM by the TRAVELLING of TRAINS or the MOVEMENT of VEHICLE lway, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury.

From lling off ngines. c. during e travel- ling of trains.		By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains.		When getting on or off engines, vans, &c. during the travelling of trains.		Whilst attending to, or by the failure of, machinery, &c. of engines in steam.		Whilst working on the permanent-way, sidings, &c.		Whilst attending to gates at level-crossings.		Whilst walking, crossing, or standing on the line on duty.		From being caught between vehicles.		From falling or being caught between trains and platforms, walls, &c.		Whilst walking, &c. on the line on the way home or to work.		Mis-cellaneous.		TOTAL.	
ed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	4	6
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
-	1	-	-	-	-	-	-	1	-	-	-	2	2	-	-	-	-	-	-	-	-	4	9
-	-	-	1	-	-	-	2	1	1	-	-	3	4	-	1	-	4	1	-	-	3	6	32
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
-	-	-	3	-	5	-	25	-	-	-	-	2	5	-	-	1	2	2	-	-	7	8	95
-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
-	-	-	-	-	6	1	19	-	1	-	-	7	11	-	1	-	2	-	-	-	4	17	131
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	1	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
-	2	-	-	-	1	-	25	2	3	-	-	5	8	-	8	1	-	-	1	-	8	13	149
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	5
-	1	1	1	-	4	-	4	-	-	-	-	1	4	-	-	1	-	1	-	-	4	4	37
-	-	-	-	1	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	3	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	3	2
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	1	-	-	-	2	-	1	-	-	1	1	1	1	-	-	-	-	-	-	5	20
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3
4	1	-	-	2	-	1	2	2	-	-	2	2	-	2	-	-	-	-	-	-	-	10	30
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
1	-	2	1	2	-	25	2	-	1	-	7	4	1	4	1	1	-	-	-	4	17	81	
-	-	-	-	1	-	1	-	1	-	-	2	1	-	-	-	-	-	-	-	1	2	7	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	
-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1	2	
-	-	-	-	-	-	2	1	1	-	-	3	-	-	-	-	-	-	-	-	1	4	8	
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	
10	2	8	3	22	1	107	10	12	1	-	38	50	2	17	5	11	6	2	-	35	108	654	

[*Continued on next page.*

TABLE No. 5.—Number of Servants reported

NAME OF COMPANY.	From accidents to trains, &c. *See* Table No. 4.		Whilst coupling or uncoupling vehicles.		By coming in contact whilst riding on vehicles during shunting with other vehicles, &c. standing on adjacent lines.		Whilst passing over, or standing upon, buffers during shunting.		When getting on or off, or falling off, engines, waggons, &c. during shunting.		Whilst braking, spragging, or chocking wheels.		Whilst attending to ground-points, marshalling trains, &c.		Whilst moving vehicles by capstans, turntables, props, &c. during shunting.		By other accidents during shunting operations not included in the preceding.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
SCOTLAND.																		
Caledonian	–	–	1	4	–	–	–	1	1	3	–	7	–	–	1	–	1	6
City of Glasgow Union	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Glasgow and Paisley Joint	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Glasgow and South-Western	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Glasgow, Barrhead, and Kilmarnock	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Great North of Scotland	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Highland	–	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North British	–	–	–	3	–	–	–	2	–	2	1	1	–	–	–	1	2	4
Perth General Station	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL, SCOTLAND	1	3	2	9	–	–	–	3	1	5	1	8	–	–	1	2	3	11
IRELAND.																		
Belfast and Northern Counties	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dublin, Wicklow, and Wexford	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Great Northern of Ireland	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
Great Southern and Western	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Midland Great Western of Ireland	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
TOTAL, IRELAND	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	1	2	–
TOTAL, UNITED KINGDOM	1	19	6	80	–	2	–	7	3	58	2	42	1	7	8	76	29	133

Note.—An analysis and comparison of the figures in the Returns of accidents appear to show that the Railway Companies do not report all minor In estimating, therefore, the reliability of the figures set out, and in comparing the proportion of accidents on the several lines, this difference must be consideration for adoption with a view to securing greater uniformity and accuracy in the Returns supplied.

lled or Injured, &c.—*continued.*

om g off nes, uring avel- g of ns.	By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains.		When getting on or off engines, vans, &c. during the travelling of trains.		Whilst attending to, or by the failure of, machinery, &c. of engines in steam.		Whilst working on the permanent-way, sidings, &c.		Whilst attending to gates at level-crossings.		Whilst walking, crossing, or standing on the line on duty.		From being caught between vehicles.		From falling or being caught between trains and platforms, walls, &c.		Whilst walking, &c. on the line on the way home or to work.		Mis-cellaneous.		Total.	
In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.
3	–	1	–	1	–	3	1	2	1	–	2	2	1	–	–	2	–	1	–	1	9	37
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
–	–	1	–	–	–	2	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	7
–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	3
–	–	1	–	3	–	2	–	2	–	–	2	3	–	–	–	–	–	–	2	–	7	24
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
3	–	3	–	4	–	7	1	6	1	–	5	6	1	1	–	2	–	1	2	1	19	75
–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	2
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–
–	–	–	2	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	5	6
13	2	11	5	27	1	114	11	18	2	–	43	57	3	18	5	13	6	3	2	37	132	735

lents on an uniform basis, owing to a difference in their interpretation of the meaning of the provisions of the Regulation of Railways Act, 1871 e in mind, in fairness to those Companies who habitually report every accident of whatever kind which occurs. Means are, however, under

TABLE No. 6.

TABLE showing the different OCCUPATIONS of SERVANTS of RAILWAY COMPANIES and CONTRACTORS who were KILLED and INJURED during the Three Months ending 31st March 1894, and classifying their INJURIES as far as practicable.

CLASS OF SERVICE.	Fatal.	Amputations.			Fractures.		Dislocations.	Crushes.			Scalds, Burns.	Sprains, Cuts, or Bruises.	Severe.	Shaken.	Slight.	Unspecified Injury to				Miscellaneous.	Total Injured.
		Legs or Arms.	Feet or Hands.	Toes or Fingers.	Legs or Arms.	Collar-bones or Ribs.		Legs or Arms.	Feet or Hands.	Body.						Head.	Body.	Legs or Arms.	Feet or Hands.		
Brakesmen and Goods-guards	16	2	2	2	5	4	3	2	14	2	1	40	8	2	1	7	17	16	14	1	143
Capstanmen	2	1	1	–	2	–	–	–	3	–	–	3	–	–	–	–	1	3	4	–	18
Carmen	–	–	–	–	1	1	–	–	1	–	–	1	–	–	–	2	–	1	–	–	7
Carriage-cleaners	3	–	–	–	–	–	–	–	1	–	–	2	1	–	–	–	1	–	–	–	5
Carriage or waggon examiners	2	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	2
Checkers	1	1	–	–	–	1	–	–	1	–	–	2	1	–	–	–	1	–	–	–	7
Chockers, Chain-boys, and Slippers.	2	–	–	–	–	–	–	–	1	1	–	2	–	–	–	–	–	–	6	–	10
Clerks	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Engine-cleaners	2	1	1	–	–	1	–	–	2	1	–	2	2	–	–	–	–	2	2	–	14
Engine-drivers	1	–	–	2	2	3	4	–	5	–	4	15	3	2	2	5	5	15	7	1	75
Firemen	9	1	–	1	–	1	3	–	6	1	5	33	6	–	3	7	6	13	17	–	103
Gatekeepers	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Greasers	–	–	–	–	–	–	–	–	1	1	–	2	–	–	1	–	–	–	–	–	5
Guards, Passenger	3	–	–	–	1	–	–	–	–	–	–	9	–	1	1	1	–	2	–	–	15
Horse-drivers	1	–	–	–	1	1	–	–	–	–	–	3	1	1	–	–	2	2	1	–	12
Inspectors	2	–	–	–	–	–	–	–	–	–	1	3	1	–	–	1	–	–	1	–	7
Labourers	9	–	–	–	–	–	–	–	2	–	–	5	–	1	–	2	2	4	2	–	18
Lampmen	1	–	–	–	–	–	–	–	–	1	–	2	–	–	–	–	–	–	–	–	3
Loaders and Sheeters	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	1	3	–	–	6
Mechanics	2	–	–	–	1	1	–	–	–	–	–	3	–	1	1	–	1	2	2	–	12
Messengers	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Number-takers	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	2	1	–	5
Permanent-way Men	22	3	1	–	3	3	–	2	–	–	–	5	3	–	1	1	2	2	–	–	26
Pointsmen	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	1	–	5
Policemen	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Porters	19	1	1	2	3	3	–	5	12	4	1	22	3	1	2	3	9	14	8	–	94
Shunters	13	–	–	2	2	3	–	3	14	–	–	19	3	–	3	8	10	18	13	1	99
Signal-fitters	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Signalmen	1	–	–	–	1	–	–	–	–	–	–	3	1	–	–	–	–	1	2	–	8
Station-masters	4	–	–	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	2
Ticket-collectors	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Watchmen	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	2
Yardsmen	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	1	–	3
Miscellaneous	4	1	2	–	1	–	–	–	1	1	–	2	2	1	1	3	1	4	2	–	22
Contractors' Servants	4	–	1	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	3
TOTAL	132	12	11	9	24	22	10	12	67	12	12	181	39	10	18	40	60	108	85	3	735

TABLE No. 7.

NUMBER of PERSONS reported, during the Three Months ending 31st March 1894, as having been KILLED OF INJURED whilst upon the Companies' Premises, by Accidents in which the Movement of Vehicles used exclusively upon Railways was not concerned, distinguishing between Passengers, Servants of Companies, and other Persons, and classifying, as far as practicable, the Nature and Causes of the Accidents occasioning the Death or Injury.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS :—								
Whilst ascending or descending steps at stations	—	36	—	1	—	—	—	37
By being struck by barrows, by falling over packages, &c. on station platforms	—	13	—	1	—	—	—	14
From falling off platforms	—	7	—	—	—	—	—	7
By other accidents	1	21	—	—	—	—	1	21
TOTAL	1	77	—	2	—	—	1	79
SERVANTS :—								
Whilst loading, unloading, or sheeting waggons	1	343	—	4	—	1	1	348
Whilst moving or carrying goods in warehouses, &c.	1	64	—	—	—	—	1	64
Whilst working at cranes or capstans	—	22	—	—	—	—	—	22
By the falling of waggon-doors, lamps, bales of goods, &c.	1	55	—	3	—	—	1	58
From falling off, or when getting on or off, stationary engines or vehicles	1	63	—	—	—	—	1	63
From falling off platforms, ladders, scaffolds, &c.	3	105	1	1	—	—	4	106
By stumbling whilst walking on the line or platforms	—	99	—	—	—	1	—	100
Whilst attending to stationary engines in sheds	—	43	—	—	—	—	—	43
By being trampled on or kicked by horses	—	12	—	—	—	—	—	12
Whilst working on the line or in sidings	—	127	—	—	—	—	—	127
Miscellaneous	1	107	—	—	—	—	1	107
TOTAL	8	1,040	1	8	—	2	9	1,050
PERSONS ON BUSINESS AT STATIONS AND OTHERS	4	38	—	1	—	—	4	39
SUMMARY :—								
Passengers	1	77	—	2	—	—	1	79
Servants	8	1,040	1	8	—	2	9	1,050
Persons on business at stations and others	4	38	—	1	—	—	4	39
TOTAL ALL CLASSES	13	1,155	1	11	—	2	14	1,168

Board of Trade,
5th July 1894.

COURTENAY BOYLE.

REPORTS TO THE BOARD OF TRADE BY INSPECTING OFFICERS OF THE RAILWAY DEPARTMENT UPON CERTAIN ACCIDENTS WHICH HAVE BEEN INQUIRED INTO.

	Page.
CAMBRIAN:	
Major Yorke's report on the collision that occurred on the 23rd February between two portions of a passenger train that had separated at Talerddig Top	23
Major Yorke's report on the collision that occurred on the 5th March between a mixed train and a goods train at Bettisfield	27
CHESHIRE LINES:	
Major Yorke's report on the collision that occurred on the 21st March between a passenger train and a light engine at the Central station, Manchester	33
GREAT NORTH OF SCOTLAND:	
Major Marindin's report on the collision that occurred on the 29th December 1893, between a mixed train and some waggons standing on a siding at Drummuir station	36
GREAT WESTERN:	
Major Marindin's report on the accident that occurred on the 12th February to a passenger train, the leading wheels of the engine of which left the rails near Upwey junction	43
HIGHLAND:	
Major Marindin's report on the collision that occurred on the 28th March between a mixed train and a goods train at Tain	46
LANCASHIRE AND YORKSHIRE:	
Major-General Hutchinson's report on the collision that occurred on the 22nd February between two passenger trains at Thorpes Bridge junction, Newton Heath	53
LONDON AND NORTH WESTERN:	
Major Yorke's report on the collision that occurred on the 22nd February between two passenger trains at Walsall	57
Major Yorke's report on the collision that occurred on the 26th February between a passenger train and the buffer-stops at London Road station, Manchester	62
MIDLAND GREAT WESTERN OF IRELAND:	
Major-General Hutchinson's report on the collision that occurred on the 6th January between a passenger train and a goods train at Moate	64
NORTH BRITISH:	
Major Marindin's report on the collision that occurred on the 12th March between a passenger train and a goods train at Castle Cary	69
SOUTH EASTERN:	
Major-General Hutchinson's report on the collision that occurred on the 22nd February between a passenger train and a light engine near Cannon Street station	74

CAMBRIAN RAILWAYS.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
April 2, 1894.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in accordance with the Order of the 13th March, the result of my enquiry into the collision that occurred on the 23rd February at Talerddig Top on the Cambrian Railways.

In this case as the 12.30 p.m. up train from Aberystwyth was passing over Talerddig Top the drawbar of a coach in the middle of the train gave way, and the train becoming separated, the automatic continuous-brake came into action, and immediately brought both portions of the separated train to rest. The banking-engine which had been assisting the train up the Talerddig incline, and which had been uncoupled and was following the train a few yards in rear, ran into the tail of the train owing to the latter coming suddenly to a stop.

No passengers are reported to have complained of injury, but inspector Gough of the Cambrian Company, who was travelling in the rear van of the train, received a blow on the head and a cut on the face, which were not of a very serious nature.

The train consisted of a four-wheels coupled bogie passenger engine, six-wheeled tender, and eight coaches, including two vans. The engine, tender, and train were properly fitted with the automatic vacuum-brake, which was in good working order.

The drawbar which broke belonged to carriage No. 49, which was the fourth vehicle from the tender. The saloon at the end of the train had four windows broken, axle-guard displaced, and various bolts broken by the collision, no other damage being done to rolling-stock or permanent-way.

The banking-engine, which was not injured, was a four-wheels coupled passenger engine, with single leading wheel, and having a four-wheeled tender. It was fitted with the automatic vacuum-brake, and the usual hand-brake. Driver Griffith Thomas of this engine stated that the vacuum-brake was out of order on the engine, but not on the tender. But satisfactory evidence was forthcoming to show that this was not the case, and that the vacuum-brake was in good order. Thomas, however, was relying upon his hand-brake, and not on the vacuum-brake, while "banking" the train up the incline, so that the condition of the vacuum-brake did not affect the collision.

Description.

Talerddig Top, where this collision occurred, is the summit of two steep inclines which fall away from this point in opposite directions, and is situated about half-way between the stations of Llanbrynmair and Carno. On leaving Llanbrynmair the line ascends in a gradient of 1 in 52 for 2 miles 20 chains, then at 1 in 56 for 66 chains to the summit, where it is level for 20 chains. It then falls again towards Carno at 1 in 80. The line is single, but there is a passing place for passenger trains at Llanbrynmair, and there is a siding loop for goods trains at Talerddig Top. The line is worked on the train tablet system, and there are tablet-stations and signal-cabins at both Llanbrynmair and Talerddig. It is usual to attach a banking-engine at Machynlleth to all up passenger trains consisting of eight coaches or more, and a practice has arisen of uncoupling the banking-engine while the train is in motion, near the top of the incline. On the day in question there was a special down goods train waiting in the siding at Talerddig Top for the up passenger train to pass.

Evidence.

Richard Gough, inspector, states: I travelled in the rear van of the 12.30 p.m. train ex Aberystwyth on Friday, 23rd February 1894. On leaving Machynlleth, guard Parry was in charge of the train, and I was in the same van as himself, *i.e.*, the rear van. At Machynlleth extra-man Wilson got into the front van for the purpose of alighting at Cemmes Road or Llanbrynmair for the purpose of working back the special down goods. Wilson did not alight at Cemmes Road, as the special goods had not arrived at that station. The passenger train did not stop at Llanbrynmair, as the goods was not there. On arrival at the top of Talerddig, and when between the home-signal and the cabin, the train was slackened to a speed of about 10 miles an hour for the purpose of taking the tablet. The passenger train was being

banked. Guard Parry remarked to me, "Here is the goods." I crossed the van and looked through the window on the left-hand side of the brake, and saw the down goods in the siding. I then noticed Wilson drop off the train, and as he did so he waved his hands to the driver, meaning that he was off the train. At the same moment the train came to a sudden stop, and my head was knocked against the side of the window, causing a cut on my cheek bone and a nasty bruise on the side of the head. I was thrown against the partition in the van, but fortunately sustained no further injury. Guard Parry immediately got out of the brake, and I remained for two or three minutes to recover myself, after which I walked up the train, and noticed that the drawbar of composite carriage No. 49 was pulled out, and had become detached from the latter part of the train. Behind this coach were the following vehicles:—Third-class carriage No. 12, composite carriage No. 156, guard's brake No. 104, No. 9 saloon (in which Mr. George Owen was travelling). I noticed on the ground a part of the hook of one of the side-chains, but cannot say to which carriage it belonged. I did not examine the couplings of either No. 49 or any of the other vehicles. The coach was shunted into the siding, and I gave instructions for it to be sent to the works at Oswestry, and it came up by the next train. I did not experience any jerk until the train came to a sudden stand. I did not hear that anyone in the front part of the train felt the sudden stopping of the train. No complaints were made by any of the passengers. It is the usual practice for the man who has to work back a special goods to alight at the station where the goods is met. I never before remember meeting a goods train at Talerddig, and consider it very undesirable that the man should alight at Talerddig, as in this case. The custom is to attach the banking-engine at Machynlleth when there are eight vehicles on the train. The banking-engine was coupled to the train at Machynlleth on the day in question. It is the fireman's business to couple the banking-engine to the rear of the train. This section of the line is worked by tablet, and the rear engine carries the tablet, and gives it up at the stations. It is usual to uncouple the banking-engine half or three-quarters of a mile from Talerddig cabin. The driver unhooks his engine from the train. After it is uncoupled the banking engine assists the train until it gets to the top, and then eases off. When the stoppage occurred we were not quite on the level, but still going up the incline. We had not quite come up to the home-signal. The banking-engine eased off a little before this. I cannot say whether the driver of the front engine put on steam.

Henry Parry, guard, states: I have been in the service of the Cambrian Company 25 years, and 23 years guard. On the 23rd February I came on duty at 12 mid-day. On the 22nd I came off duty at 6 p.m. I was in charge of the 12.30 p.m. train on the 23rd. On arriving at the top of Talerddig I was sitting down in my brake on the left-hand side looking forward to the engine. We were travelling at a speed not exceeding 10 miles an hour. I saw Wilson drop off the train and his pole thrown out to him. This must have been done by extra man Roberts who was working with me, travelling in the front van. I at once remarked to inspector Gough, "Here is the goods." The arrangement was for the train to stop at Llanbrynmair to set Wilson down, but on arrival at that station, as the down goods was not there, I signalled to the driver to go on. At the time of the occurrence the train was running at the ordinary speed. I did not know when I gave the signal to the driver not to stop at Llanbrynmair where Wilson would meet the goods. It might have been Carno. If I had thought it would have been Talerddig, in view of the incline, I should certainly have given instructions to the driver to come to a stand, in fact, I did not think for a moment that Wilson would get off at Talerddig. I was not shaken in any way by the train coming to a sudden stand. I got out of my brake immediately, and noticed that four of the coaches had become detached from the train. No. 49 had the drawbar pulled out and the brake-gear separated. I saw Wilson but did not speak to him. Driver Ffoulkes ran back to see what had happened, and he asked what was the matter. I pointed out to him the drawbar and the detached carriages, and he seemed much surprised. The cause of the train separating was, in my opinion, the weakness of the drawbar. I did not observe a sudden jerk or anything unusual in the ordinary working. I did not speak to extra man Roberts at Talerddig, but at Welshpool I asked him if he put the brake on, and he answered "I did not" without the slightest hesitation. Wilson, certainly, could not have done so as he was on the ground before the train came to a stand. I cannot say how near the banking-engine was to No. 9 saloon at the time of the occurrence. It is usual for the banking-engine to cease helping the train when emerging from the cutting. I never leave a terminal station without seeing that every vehicle is properly coupled up. I did so on the 23rd February. Both the side-chains of carriage No. 49 and one side-chain of No. 12 were broken. The screw-coupling, of course, came away with the drawbar. The train was composed of eight vehicles, viz.: Brake-van No. 565, composite No. 155, third No. 199, composite, No. 49, third No. 12, composite No. 156, brake-van No. 104, saloon No. 9. I did not hear any passengers complain. The banking-engine was not attached to the train at the time of the occurrence. The coupling-chains broke by the sudden jerk after the drawbar came out.

John Ffoulkes, driver, states: I have been in the Cambrian Company's service 30 years, and 26 years driver. On the 23rd February I came on duty at 2.45 a.m., and was due off at 4.15 p.m. I waited at Aberystwyth from 6.55 to 12.30 for rest, when I was booked off. On the 22nd I came on duty at 8.0 a.m., and was off at 4.15 p.m. My engine was No. 61 four-wheeled coupled passenger bogie-engine, fitted with automatic vacuum and hand-brake on tender-wheels. The brake was in proper working order, and I tested it before leaving Aberystwyth. I was driver of the 12.30 p.m. train on the 23rd February. Extra-man Wilson asked me to stop at Llanbrynmair if the down goods was there, if not, to go on. I certainly did not expect him to get off at Talerddig. We were running at seven or eight miles an hour when easing for the purpose of taking the tablet, and then suddenly the brake was applied. I had a little steam on at the time, but am absolutely certain there was no jerk which would have caused the breaking loose of the train. Directly the train came to a stand I went back to see what was the matter and met guard Parry. I at once saw the four vehicles were separated from the train. There was about four or five yards space between the two portions of the train. I saw extra man Roberts and asked him what was the matter, and he said he did not know. I cannot say whether he applied the brake. When I went down the train I noticed that the banking-engine was close to No. 9 saloon, but cannot say whether it actually touched. I have no idea how the damage was done. I do not think the damage occurred when the banking-engine was coupled to the train. I always receive a signal from the driver of the banking-engine when he has unhooked, and he gave it on this occasion fully a minute before the train came to a stand. Seeing the up goods in the siding at Talerddig, I slowed the train more than usual for the purpose of taking the tablet. I reduced the speed by partially closing the regulator, but this caused no jerk to the train.

Griffith Thomas, driver, states: I have been in the Company's service 16 years, and three years driver. On the 23rd February I came on duty at 10 a.m. and went off duty at 11.30 p.m. I was booked off

for 2½ hours in the middle of the day. On the 22nd my hours were the same. My engine was No. 56 four-wheeled coupled and four-wheeled tender, fitted with the automatic-brake and hand-brake on tender wheels. I was driver of the engine which banked the 12.30 p.m. train on the 23rd February. I unhooked my engine from No. 9 saloon about a mile from the top of Talerddig. This is the usual place where we do this. Although we unhook at this place we still assist the train until we get over the bank, which would be about 200 yards from the signal-cabin. I generally ease on coming out of the cutting. I have banked up from Machynlleth to Talerddig for the last three years. I gave driver Ffoulkes a hand-signal that I was off the train. It is not customary to give a signal to the driver when I uncouple from the train. After going about 20 yards I noticed Wilson drop off the train, and saw the four vehicles break away from the front part of the train. I could not possibly stop my engine to prevent coming in contact with the saloon. I was going about six or seven miles an hour. The contact with the saloon was sufficient to stop my engine and knock it back a foot. The vacuum-brake was out of order on my engine. It was all right on the tender. I had no vacuum available when I got to the top of the incline, because I did not think there would be any necessity for it. I reversed my engine and the fireman put on the hand-brake. I heard drivers Ravenscroft and R. Williams say the brake had been out of order for some weeks. I did not report this to Mr. Sanger. It was not my usual engine, and I was only working it for that day. The engine has been working between Portmadoc and Machynlleth for some time past. Even if the brake had been working properly it would not have enabled me to prevent coming in contact with the separated part of the train. It has been customary for me to unhook about a mile from the top, because the train is going slowly at about 12 miles an hour. It is the usual practice with everyone. If I had gone on a further distance, when approaching the level before unhooking, the speed of the train would have increased. I generally unhook at Bell's Bridge. When I was fireman on the banking-engines the drivers always unhooked at this point.

David Wilson, extra man, states: I have been with the Company 18 months. On the 23rd February I came on duty at 6 a.m., and went off at 7 o'clock in the evening. I was booked off in the middle of the day for three hours. On the 22nd my hours of duty were the same. I travelled in the front brake of the 12.30 up passenger train with Roberts and goods guard Jones. The latter was returning to Moat Lane, having worked a special goods that morning. As the train was running over the bank I jumped off, and Roberts threw my shunting pole out to me. I have never previously jumped off the train at Talerddig, and did not expect to find the goods there. I did not apply the brake before jumping from the train, or ask Roberts or John Jones to do so. I saw both Roberts and Jones after the train came to a stand, but did not ask them anything about the matter.

Richard Thomas, fireman, states: I have been 17 years in the Company's service, and nine years fireman. I have been three years with driver Ffoulkes. On the 23rd February I came on duty at 2.45 a.m., and was due off at 4.15 p.m. I waited at Aberystwyth from 6.55 to 12.30 for rest, when I was booked off. On the 22nd I came on duty at 8 a.m., and was off at 4.15 p.m. I was fireman with driver Ffoulkes on the 23rd February. On reaching Talerddig the train was slowed down more than usual and I saw Wilson drop off the train. I have never previously seen a guard drop off at Talerddig. I cannot say whether the train was slowed down in order to let Wilson drop off. Driver Ffoulkes went down to see what was the matter and I remained with the engine. I did not speak to anyone about the occurrence. I did not feel any jerk or a pull from the banking-engine. It is usual for the banking-engine to unhook at Bell's Bridge, about three-quarters of a mile from Talerddig. The train goes slowly at this point, and gives the driver a better chance to unhook. I cannot explain the cause of the separation.

Darius Griffin, fireman, states: I have been four years in the Company's service, and 1½ years fireman. I have been with driver Thomas, on and off, from six to nine months. Driver Thomas unhooked the banking-engine at Bells Bridge, about a mile or three-quarters of a mile from Talerddig, and when approaching the top of the bank we eased off, and kept about five yards away from the train. Directly the separation took place I applied the hand-brake of the tender. The brake of the engine was not working. Driver Thomas immediately reversed the engine, but could not stop it before the slight contact with the saloon. I heard my driver, after the collision, say the vacuum-brake was not working. I also heard Robert Williams, after the accident, say that it was not in working order. Driver Thomas did not, so far as I know, test the brake on that day.

Charles Roberts, extra man, states: I acted as assistant guard on the 12.30 p.m. up passenger on February 23rd. I was in the front van, guard Jones and extra-man Wilson travelling with me from Machynlleth. I did not see anyone touch the brake during the journey, or touch it myself. I am certain of this. When Wilson jumped from the train I threw out his pole. I could not say at what speed the train was travelling. I am no judge of speed. I felt a jerk just as the train came to a sudden stop, and got out of the brake to see what was the matter. I found the train had separated. I assisted in getting the draw-gear out and putting the carriage into the siding. There were about 10 passengers in coach No. 49. None of them complained of the sudden stop. I did not speak to the drivers or firemen. I have previously acted as guard of the market train from Newtown to Machynlleth. I am 19 years of age, and have been four years in the service.

John Jones, guard, states: I was in the front van of the 12.30 p.m. train from Aberystwyth on the 23rd February. Wilson was also in the brake. Neither Roberts nor myself touched the brake. The train was travelling at a speed of eight or ten miles an hour when Wilson dropped off. The train ran about 30 yards after Wilson dropped. After the sudden stop I walked down the train to where it had separated and assisted in getting coach 49 into the siding. I did not hear any reason assigned for the breaking away of the draw-gear. I did not feel a jerk before the train stopped. I did not speak to driver Thomas or his fireman. I did not know the banking-engine had come in contact with the saloon until our arrival at Moat Lane, when guard Parry mentioned it. I was returning home to Moat Lane after working a special down goods. I have been in the Company's service 18 years.

Joseph Jenkins, foreman: On 23rd February I was in charge of the station at Machynlleth, the station-master being absent at his dinner. At 1.29 the 12.30 train ex Aberystwyth arrived at Machynlleth, and left at 1.33. We had a message from Moat Lane to send a guard from here to meet a special goods running from Moat Lane to Machynlleth, to relieve the man with the train. I ordered David Wilson (extra man) to go with the passenger train, in order to meet the goods. The trains pass each other as a rule at Cemmes Road or Llanbrynmair. The passenger train is booked to stop at Cemmes Road, and by signal if required at Llanbrynmair. When he found the goods was not at Cemmes Road, it was his duty

to have ascertained at Cemmes Road whether the train was to be stopped at Llanbrynmair, and if not he should have waited at Cemmes Road till the special goods arrived and have joined it there. The object of relieving the guard of the special is to enable him to get back to Moat Lane not later than by the 2 p.m. mixed train from Machynlleth. It is a usual custom to relieve the guard in this way, at Cemmes Road or Llanbrynmair. I did not know that Wilson intended to leave the train while in motion, or that he or the other relief man had ever done such a thing before. I never gave him special instructions on the matter from the time he took up this work.

Samuel Ravenscroft, driver: I have with the Company 31 years, and driver about 27 years. My engine during the last six months has been No. 56 passenger engine, four wheels coupled tender engine, fitted with the automatic brake apparatus and hand-brake. On the 23rd February I was driving No. 44 engine, another engine of the same class. No. 56 had been handed over at Machynlleth for her to return to Oswestry for slight repair the day before. The brake of No. 56 was in proper working order at the time she was left at Machynlleth. I never made any remark to driver Thomas as to the brake being out of order, either before or after the accident. His blocks were all right on all the wheels of both engine and tender.

Robert Williams, driver: I have been 14 years driver, and have been driving No. 56 engine for the last four months on alternate days. The automatic-brake did not work quite sharp when the engine was running light. There was no difficulty in keeping up the vacuum. But the blocks did not apply quite so sharp as No. 44, the engine I am now driving. I never reported or complained about it, as the defect was not serious enough. But I may have talked about the matter among ourselves in our enginemen's cabin.

Conclusion.

The following are the circumstances disclosed in the evidence under which this collision, of which the effects were slight, occurred. The 12.30 p.m. train from Aberystwyth, consisting of six passenger vehicles and two brake-vans, had as usual a banking-engine attached in rear at Machynlleth, in order to assist it up the Talerddig incline, the gradient of which is 1 in 52 for $2\frac{1}{4}$ miles, and then 1 in 56 for three-quarters of a mile up to the top. The train is booked to stop at Cemmes Road, which is the next station to Machynlleth, but it only stops at Llanbrynmair and Carno if required to set down or pick up passengers, the next fixed stop being Caersws. The Talerddig incline is situated between Llanbrynmair and Carno. When about three-quarters of a mile from the top of the incline the driver of the banking-engine got round to the front of his engine and uncoupled it while in motion, from the train, which however the rear engine still continued to assist up the incline. The train-engine and train were properly fitted with the automatic vacuum-brake, which was connected up, but the brake connection was not made between the rear vehicle and the banking-engine, so that there was no difficulty, though a certain amount of risk to the driver, in uncoupling the latter engine from the train while they were in motion. On reaching the top of the incline, known as Talerddig Top, the banking-engine was eased off from the train, and the latter should have proceeded forward on its journey, after the driver had received the train tablet for the next section from the signalman in the cabin. But before the train-engine had quite reached the signal-cabin the drawbar of No. 49 coach gave way, and the train becoming separated, the continuous brake came automatically into action, and at once caused the two portions of the train to come to rest within five yards of each other. The front portion consisted of engine, tender, and four vehicles, and the rear portion of the remaining four vehicles. The driver of the banking-engine, which, as stated, had eased off from the train, but which was following it up a few yards behind, was not prepared for this sudden stop, and before he could do anything to bring his engine to a stand it ran into the rear portion of the train, with the result already described.

It would appear, therefore, that this collision was due in the first place to the breaking of the drawbar of No. 49 coach, and in the second place to the fact that the train was not brought to a stand before the banking-engine was uncoupled. The cause of the breaking of the drawbar cannot be definitely ascertained. The exact position of the fracture was in the eye of the drawspring buckle, and an examination of the fracture seemed to me to indicate that a slight flaw previously existed at this place, but it is not possible to speak with certainty as to this. The coach is an old one, having been in use since 1863, and although it has been in the shops for repair 31 times during the last 30 years, there is no record of the drawbar or its connections having been removed, and I think it may be assumed that the eye of the buckle was weakened by age, and was in fact worn out. But the breaking of this drawbar would have had no evil effects, other than delay to the train, as the immediate action of the continuous-brake brought both portions of the train to a stand-still, had it not been for the fact that the banking-engine was following up the train a few yards in rear, and could not be stopped before it had run into the last vehicle of the train. Although, therefore, the breaking of the drawbar prepared the way, the collision was undoubtedly due

to the action of driver Griffith Thomas in uncoupling his banking-engine from the train he was assisting up the incline, while still in motion. I do not, however, blame driver Thomas for this, for he only did on this occasion, what has been the recognised practice for some years past. The responsibility for the mishap must rest upon the Railway Company who have permitted this most improper arrangement of uncoupling the banking-engine from a train while in motion, involving risk both to the driver of the banking engine and to the passenger train, to develop into a regular practice, rather than upon the driver, who doubtless thought he was merely doing what was required of him.

Since this collision the General Manager of the Company has issued the following instructions on the subject, viz. :—

"Passenger or mixed trains when banked by an assistant engine either from Machynlleth to Talerddig or from Moat Lane to Talerddig must in all cases be stopped at Talerddig top signal-cabin, for the purposes of enabling the assistant engine in the rear of the train to uncouple.

"These instructions will also apply to the banking of any passenger or mixed trains throughout the line.

"It must be clearly understood that no engines are to uncouple in the rear of passenger or mixed trains whilst these trains are in progress."

These instructions are satisfactory so far as they go, but they do not go quite far enough. In the case of passenger trains it is desirable that as a rule the assistant engine of a passenger train should be coupled on in front and not in rear of the train. But, whether the assistant engine is in front or in rear, the automatic continuous brake should invariably be connected up between the assistant engine and the rest of the train, as it is contrary to the Act of 1889 for an engine to be attached unbraked to any passenger train. Moreover, in the instructions quoted above the prohibition to uncouple an assistant engine from a train while in motion is limited to passenger and mixed trains, but this prohibition should be made equally applicable to engines assisting goods trains, and it should be forbidden at all times to uncouple an assistant engine whether in front or rear, from the the rest of the train while in motion.

Another irregularity which came to light in consequence of this collision, was that extra-man Wilson, who had been ordered to relieve the guard of a special goods train from Moat Lane, and who was travelling by the passenger train with a view to joining the goods train at one of the intermediate passing places, jumped from his train, while in motion at Talerddig Top, when he discovered the goods train waiting in the siding at this place for the passenger train to pass. As in the case of driver Griffith Thomas, I do not blame Wilson, as I have no doubt he was zealously doing what he regarded as his duty, and what he probably had been permitted, if not required, to do on other occasions at other places. But a system of working, which allows a servant of the Company to incur such an unnecessary risk in the execution of his duty, cannot be passed over without remark. It is satisfactory to be able to state on the authority of the General Manager, that strict orders have now been issued, which will if obeyed prevent any repetition of this dangerous practice.

I was informed by the Locomotive Superintendent that he proposes, in future, to adopt an improved pattern of drawbar, but in the meantime it would be advisable for the company to cause an examination to be made of the drawbars, &c. of any other old rolling-stock which may be in use on the line.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

H. A. Yorke,
Major, R.E.

Printed copies of the above Report were sent to the Company on the 16th April.

CAMBRIAN RAILWAYS.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
28th March 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 16th instant, the result of my enquiry into the

collision that occurred on the 5th idem at Bettisfield station on the Cambrian Railways.

On this occasion, as the 2.30 p.m. goods train from Oswestry to Whitchurch was standing outside the home-signal at Bettisfield station it was run into in rear by a special mixed train consisting of horse-boxes and cattle trucks, one passenger carriage and brake-van, which had left Welshpool at 4.15 p.m. for Whitchurch. One passenger, the only occupant of the passenger carriage, complained of slight injury to his leg. Two servants of the Company, viz., fireman Davies of the special train, who jumped from his engine before the collision, and guard Bromley, who was thrown down in the brake-van of the special train, received a shaking.

The goods train consisted of a six wheels coupled tender-engine, 37 goods waggons, and a brake-van. The three rearmost vehicles, viz., the brake-van belonging to the Cambrian Company, and two goods trucks belonging to the London and North-Western Railway Company were smashed to pieces. Two pairs of waggon wheels were lodged under the engine of the special, and one pair under the tender, while the body of the Cambrian van was pitched on the top of the engine.

The special train consisted of a four wheels coupled bogie passenger engine with six-wheeled tender, six horse-boxes, four loaded waggons, seven empty waggons, one third-class coach, and one brake-van, making a total 19 vehicles. The engine which was a new one was fitted with the automatic vacuum-brake and hand-brake. The engine received considerable damage, for details of which *see* Appendix, but no injury was done to the train.

Forty chairs, thirty-two sleepers, and sixteen rails were more or less damaged in the permanent-way.

Description.

The line through Bettisfield station, which is not a passing place for passenger trains, is single, and there is only one platform. But there is a siding loop about 300 yards along, which enables goods train to get out of the way of a passenger train. or two goods trains to pass each other, and which also gives access to the goods yard.

The station is interlocked, and there are starting, home, and distant signals in each direction. The line is worked on the train tablet system, Bettisfield being a tablet station.

The station is approached from the direction of Ellesmere on a rising gradient of 1 in 80, which extends for a distance of 28 chains up to the up distant-signal, from which point the line becomes level through and beyond the station for 67 chains. The up distant-signal is 530 yards from the up home-signal, and from the latter to the signal-cabin the distance is 182 yards. Outside the distant-signal there is a slight curve of one mile radius.

The goods train which had come to a stand at the up home-signal was 270 yards long, so that the brake-van at the tail of it was standing 250 yards from the up distant-signal.

The following extracts from the Regulations and Instructions for working single lines by train tablets are of importance :—

6. When a train or light engine arrives at a station, and the signalman or other official in charge of the signals has received the train tablet, he must see that the whole of the train is clear of the section, and then deposit the tablet in the cylinder of the electric instrument lettered side downwards.

* * * * *

16. *Section clear but station or junction blocked.*—When the line is clear to the home-signal and it is necessary for a train to be allowed to approach a post cautiously, in consequence of an obstruction existing ahead of a home-signal, or from any other cause, the train tablet signal must not be acknowledged, but the signal "Section clear but station or junction blocked" (thirteen beats on the bell), must be given, and not until this signal has been acknowledged by being repeated, must permission be given to the station or signal-box in the rear for a train tablet to be issued.

The signalman receiving the signal "Section clear but station or junction blocked" must hand the tablet to the driver, and verbally instruct him to proceed cautiously to the post from which such signal has been received.

Evidence.

Charles Williams, driver, states: I have been in the Cambrian Company's service about 22 years, and have been driver for 13 years. I drive both passenger and goods trains. On the 5th March I came on duty at 8.30 a.m. at Oswestry and, owing to the accident, remained on duty until 4.15 a.m. on the 6th. I left duty on the 4th at 4.15 p.m., and had been off duty from that time until 8.30 the next morning. My booked hour to leave on the 5th was 8.45 p.m., but I was detained from 8.45 p.m. until 4.15 a.m. on account of the accident. I worked the 2.30 p.m. goods train from Oswestry to Whitchurch on the 5th instant. We left Oswestry at 3 p.m., 30 minutes late. We were booked to stop at Bettisfield, and arrived there at 5.20 p.m., 25 minutes late. I had goods engine No. 1, six-wheel-coupled with six-wheel tender, fitted with the automatic vacuum-brake and hand-brake on tender. The vacuum-brake works on all the 12 wheels, six wheels of the engine and six of the tender, and the hand-brake works on the tender. Coming into Bettisfield we had 39 vehicles including the van. When we arrived there the signals were against us. I pulled up close to the home-signal and uncoupled engine and some waggons, ran into the siding and then into the goods shed. There is no signal for the goods shed. The home-signal remained at danger and we were hand-signalled by the station-master into the siding. I went straight to goods shed and picked up some waggons. After picking up waggons we were shunting backwards and forwards in the yard. We dropped some waggons into the loop and we were shunting for some time, 20 minutes or so. After finishing shunting we ran round the train on the proper road, set back through the loop, picked up three waggons which we had dropped there, and then set back with the whole load on to the train. As soon as I had set back on to the train I heard the other train coming up behind. I heard the driver whistling for the brake and the engine reversed. I at once gave my engine steam and drew forward. I understand that my train was coupled up. When the collision occurred I should think we had drawn forward about six yards. The tail of our train was in motion. The waggons came up to us, but our engine was not damaged in any way. We get a good view of the Bettisfield up distant-signal for some distance. We can see it as soon as we pass Welshampton. We can see the up home-signal at Bettisfield from the distant-signal. The distant-signal is situated just at the end of the curve. We can see the station from the distant-signal, and anything that is on the road. It was light at the time this collision happened. After the collision I went to see whether the men on the other engine were all right, leaving my fireman in charge. The driver and fireman were all right, except that the latter was a little shaken. The driver of the up special told me that he had had no "caution" ticket issued to him at Ellesmere. The three vehicles at the tail-end of my train were damaged. The line is worked on the electric tablet system. When we arrived at Bettisfield we were in possession of the tablet for the section from Ellesmere to Bettisfield. We retained the tablet until we had been shunting about 10 minutes. My mate gave it to the station-master who was in the yard. The station-master asked him for the tablet. The rule is that the tablet shall be given up on arrival at a station. There was no rule at that time about going outside the home-signal for shunting purposes, and it was necessary to go outside the home-signal for shunting purposes.. We passed the starting-signal at danger and went out on the single line towards Whitchurch, and passed the down home-signal without the tablet. The guard gave me instructions to run round the waggons standing in the loop so as to back them on to the train, and to do this it was necessary to go outside. The station-master worked the points for me from the signal-cabin and therefore knew what I had to do. I did not know that permission had been given for a tablet to be taken out for another train to follow me. I knew that the special train was arranged to follow me, but I did not expect it until we were clear. It would take 11 or 12 minutes for the special to run from Ellesmere to Bettisfield. When the tablet was given up nothing was said about a tablet being required for another train. I often work the train in question and always stand outside the home-signal when there is anything to do. If there is no shunting the home-signal is lowered, and we are brought up to the starting-signal.

Edward Griffiths, driver, states: I have been in the Cambrian Company's service 18 years, and have been driver for five years. I drive both passenger and goods trains. On the 5th March I came on duty at 9.30 a.m. My booked hours were 9.30 a.m. to 9.10 p.m., but in consequence of the collision at Bettisfield I was delayed and did not leave duty until after the arrival of the special at 12.30 midnight. I was not on duty at all on Sunday the 4th March. On the 5th March I worked the special train leaving Welshpool at 4.15 p.m. We left Oswestry at 5.10 p.m. The booked time was 5.5 p.m., and we were, therefore, five minutes late. We left Ellesmere at 5.37 p.m. We had about 20 vehicles on the train, which was worked by passenger engine No. 63, with leading bogie and six-wheels tender. The engine was fitted with the automatic-brake, with a hand-brake for the tender only. The continuous-brake was not in operation on my train. We were delayed at Ellesmere waiting for the 2.30 p.m. up goods ex Oswestry to Bettisfield. On passing Welshampton we were running about 25 miles an hour. We arrived at Bettisfield at 5.51 p.m. By daytime we can see the Bettisfield distant-signal after leaving Welshampton and also at night if the lamps are lighted, but on the afternoon in question we could not see quite so far as it was getting dusk. I saw the distant-signal 200 yards off. It was at danger. I shut the steam off at the overbridge about a quarter of a mile from the distant-signal. On seeing the distant-signal at danger I told my mate to "ease her" with the brake. We passed the distant-signal at danger at a little over 10 miles an hour. We cannot see the home-signal from the distant-signal. When a driver finds the distant-signal at danger, the instruction is that he shall take such steps as will, if necessary, enable him to stop at the distant-signal and then to draw up cautiously to the home, providing there is no obstruction. I cannot say that I carried out the rule strictly. I did not really try to stop at the distant-signal. I first saw the obstruction when about 150 yards from it, and should then be running at less than 10 miles an hour. The hand-brake was on. I did not put on steam after shutting it off by the overbridge. I did not apply the automatic brake until I saw the train in front, when I immediately put the automatic-brake on and reversed the engine. I could not say at what speed we were running when the collision occurred. I stuck to the engine until we came in contact with the van of the goods train when I slipped off. The van body mounted my engine and the wheels of the van got underneath. The leading pair of wheels of the waggon next to my engine were off the line. When I saw the fish-tail signal against me I expected every minute to see the home-signal dropped for me. We were running at such a speed that if this train had not been in the way we should have pulled up at the home-signal if it had been against us. My train was not under such control as would enable me to stop at any obstruction between the distant and the home-signal. I had no warning ticket issued to me at Ellesmere. If I had received this ticket I should have pulled up at the distant-signal. I did not whistle for the guard to apply the

brake, but opened the whistle as soon as I saw the obstruction and left it open. This would not indicate to the guard that I required his brake. The van was not in motion when the collision occurred. My engine was damaged. Not having had the warning ticket, I expected the goods train had left Bettisfield. I did not remark to my fireman, when approaching the distant-signal, that I believed the goods had not left. I said to him that I expected it had left for Fenns Bank. The tail lamps of the goods train were not lighted. No. 63 is not my regular engine. I had driven it before but not very recently. I have often driven engines of the same class.

James Davies, fireman, states: I am a fireman on the Cambrian Railways and have been in the Company's service eight years. I have been fireman for four years, and have been with driver Griffiths about six months. My hours of duty on the 5th March were the same as my driver's. I was off duty altogether on Sunday the 4th. On the 5th March I worked with the 4.15 p.m. special from Welshpool. We were detained at Ellesmere about 10 minutes, waiting for the tablet. I saw the Bettisfield distant-signal when passing the overbridge—about 200 yards from the signal, and the driver immediately shut off steam. At the same time I applied my brake. I cannot say at what speed we were travelling. When we saw the distant-signal at danger the driver remarked, "he has not cleared yet," which I took to mean that he had not cleared Fenns Bank. It was getting dusk. I saw the obstruction in front of me when I was about 200 yards past the distant-signal, and I also saw the home-signal about the same time. The signal was on my side, and I was looking out for it. If the day had been clear we might have seen it before we came to the distant-signal. When the distant signal was reached we were running about 10 miles an hour. We can see into the station just after passing the distant-signal. As soon as we saw the obstruction in front the driver applied the vacuum-brake and I applied the hand-brake harder. On passing the distant-signal the hand-brake was on. I screwed it a little tighter. The rails were greasy. I jumped from the engine and bruised my body, at the same time grazing my face. I was not sufficiently injured to be off duty.

Edward Bromley, relief guard, states: I have been in the service of the Cambrian Railways Company about five years, and have been acting as relief guard since June 1893. On the 5th March I came on duty at 10 a.m. My booked hours were 10 a.m. to between 9 and 10 p.m. I worked the 4.15 p.m. special horse-box train, Welshpool to Whitchurch. On leaving Welshpool the train consisted of eight horse-boxes, one third-class coach, one brake-coach. At Oswestry we detached two horse-boxes and attached four loaded waggons and seven empties there. There was one passenger in the carriage. We were detained at Ellesmere 12 minutes, waiting for the tablet. We left Ellesmere at 5.38 p.m. On approaching Bettisfied it was getting dusk, and I did not see the distant-signal until I was close upon it. When passing the distant-signal we were, I consider, travelling from 10 to 12 miles an hour. The driver shut off steam before reaching the distant-signal, and slackened speed. I was looking out for the home-signal, and immediately my coach passed the distant-signal I was thrown with my head against the corner of the brake-coach. My injuries were not such as to necessitate my being absent from duty at all. The driver did not whistle for my brake. The sudden application of the vacuum-brake threw me down. The train would be going about eight miles an hour when I was thrown down. On approaching Bettisfield the driver whistled for the signals. I only heard the whistle for the signals. I went to the obstruction and spoke to the driver who stated he did not see the goods train until it was too late to prevent the collision. We did not have the caution ticket at Ellesmere. I saw the distant-signal against us, but not having had any warning I did not apply the brake. I did not see the home-signal before I was thrown down. On this occasion I was looking out for the distant-signal and saw it. There was no damage to my train.

Peter Shaw, goods' guard, states: I have been in the Company's service about 28 years. I have been guard about 25 years. On the 5th March I came on duty at 1 p.m. at Oswestry, and was timed to leave duty at 9.40 p.m. I was not on duty at all on Sunday the 4th instant. I worked the 2.30 p.m. goods train from Oswestry to Whitchurch. We were at Ellesmere 10 minutes shunting and arrived at Bettisfield 5.20 p.m. We pulled up outside the home-signal. The train consisted of 37 vehicles and the van. We detached three waggons at Bettisfield. We had about 10 waggons on the engine, and went into the goods yard with these to do the shunting. I attached three waggons. The goods waggons were in front of the engine. The engine ran round and backed on to them, the three waggons attached being put on in the place of the three waggons which had been detached. After the shunting was completed we set back to the train and coupled up. Just as we commenced to draw up I heard the special horse-box train whistling. I signalled the driver to go forward for the purpose of running into the siding for the special to pass. I did not know that the train was so close upon us until I heard the collision. I was surprised to hear the train coming, not being aware that "Line clear" had been given. I did not know that the tablet had been given up. It was broad daylight at the time of the accident. I did not see the special train until the collision occurred. The van and three waggons at the tail end of my train were badly damaged.

George Roberts, station-master, Bettisfield, states: I have been in the service of the Cambrian Railways Company about 21 years. I have been station-master 14 or 15 years, and have been at Bettisfield 4½ years. The tablet instruments are in my charge and I work the signals. I was on duty when the 2.30 p.m. goods train ex Oswestry arrived at 5.20 p.m., 25 minutes late, on the 5th March. The signals were against it, and it drew up outside the home-signal because there was shunting work to be performed. The shunting would occupy from 20 to 25 minutes, and when it was completed I instructed the driver to draw into the siding. He had to run round the train and pick up four waggons in the loop, and attach them to the train. After that he had to draw into the loop for the special train to pass. I took the tablet from the driver when he was setting back and had finished shunting. He was on the loop that leads to coal siding. After taking the tablet from the driver I put it in the instrument. The Ellesmere signalman had for some time been asking for the tablet. At 5.37 p.m. I gave Ellesmere permission to take out the tablet. Directly I got the tablet from the driver I went to the office and released the tablet. After giving permission at 5.37 p.m. for the special train to approach I told the driver to set back to the train. I asked the guard to look sharp and draw in as a tablet had been taken out for another train. When I took the tablet from the driver I told him I intended to accept a train under signal "Section clear, but station or junction blocked." I considered at the time that I should be justified in accepting a train under the caution-signal. It was daylight at the time of the accident, and there would be no difficulty in seeing the home-signal from the distant-signal. I was standing on the platform and saw the engine of the special passing the distant-signal. Driver Griffiths shut off steam after passing the distant-signal.

John Peter Jones, fireman, states: I was fireman of the 2.30 p.m. goods train from Oswestry to

Whitchurch on the 5th March. When we arrived at Bettisfield the engine and some waggons were uncoupled and went into the goods yard to do some shunting. The remainder of the train stood on the single line outside the up home-signal. After we had been shunting for 10 minutes the station-master came to the engine and asked for the train tablet. I gave it to him, and after that we did some more shunting for another 10 or 15 minutes. The station-master told me that the special was waiting at Ellesmere. After taking the tablet the station master went to his office. Later on, when the engine was standing on the platform line, he told me that we should have to shunt for the special. He told us to run up to the top end of the loop and then to set back through the loop on to the waggons that were standing on the loop line, and then to back on to our train, couple up, and draw the whole train forward into the loop. He said nothing about having accepted the special or that we must be quick. Just as we reached our train we saw the special coming and my driver at once drew forward, but the special train ran into us. After I gave up the tablet we did some more shunting under the orders of our brakesman. I do not think the latter knew we had given up the tablet. When the collision occurred he was near the tail of our train. My hours of duty on the day in question were the same as my driver's.

Conclusion.

This collision was caused by what must be regarded as a deliberate departure on the part of station-master Roberts from the rules laid down for working the line by means of the train tablet system.

This system if properly adhered to ensures that no two trains, whether moving in the same or in the opposite direction, can be in one and the same section of the single line at the same time.

In this case the 2.30 p.m. goods train from Oswestry to Whitchurch arrived at Bettisfield at 5.20 p.m., being 25 minutes late. As there were some waggons to attach and detach at this place the train was left standing on the single line outside the up home-signal and the engine and 10 waggons were uncoupled and sent into the goods yards to perform the necessary shunting. About 10 minutes afterwards station-master Roberts went to driver C. Williams of the goods train and asked for the train tablet of the section between Ellesmere and Bettisfield to be given up to him. Fireman Jones handed the tablet to Roberts and the engine then went on with its shunting. The station-master having obtained the tablet returned to his office, and having placed the tablet in the instrument, he performed the necessary operations to release another tablet at Ellesmere in answer to the application of the signalman at that place, who wished to send forward a special horse-box train which was then waiting at Ellesmere. The shunting at Bettisfield seems to have taken from 20 to 25 minutes altogether, and as soon as it was completed the engine with waggons attached set back through the goods loop on to the rear portion of its train, which was still standing on the single line outside the up home-signal. It had just reached its train and the guard had coupled the two portions of the train together when the special horse-box train was seen approaching. Driver Charles Williams at once gave his engine steam and drew forward, but before the tail of his train, which consisted of 37 vehicles, was in motion, the special horse-box train dashed into it, and smashed the three rear vehicles, (viz., a brake-van and two waggons) to pieces. The body of the brake-van mounted the engine of the special train, while the wheels of the van got underneath the engine. Fortunately this very serious collision was unattended by any loss of life or severe personal injury. The guard of the goods train was not in his van. Had he been there it is probable, judging from the damage done to the van, that he would have been killed. The driver of the special managed to slide off his engine just at the moment of the collision and escaped uninjured, while the fireman jumped off and was bruised by his fall.

The cause of this collision is not far to seek. Station-master Roberts released a tablet at Ellesmere and thereby allowed the special train to enter the section while the goods train was still standing outside the up home-signal at Bettisfield, and as the driver of the latter had not time to draw his train into the siding loop before the special train arrived, a collision was the almost inevitable consequence. Station-master Roberts endeavoured to excuse himself by stating that when he received the tablet from driver C. Williams the shunting was completed, but both driver Williams and fireman John Jones are positive that the shunting was only half finished when the tablet was given up.

Roberts also stated that when he released a tablet at Ellesmere to enable the special to leave that place, he intended to give the warning signal (Section clear but station blocked) to Ellesmere, but that unfortunately he omitted to do so, and he appeared to be under the impression, that had he given this warning to Ellesmere, he would have complied with the block regulations for train tablet working, and that under these circumstances he would have been justified in permitting a train to leave

Ellesmere, even while the goods train was fouling the signal line outside the home-signal.

But the regulations quoted in the earlier part of this report by no means admit of this interpretation. The wording of Rule 16 is "*When the line is clear to the home-signal*, and it is necessary for a train to be allowed to approach a post cautiously in consequence of *an obstruction existing ahead of the home-signal*," the caution "Section clear but station blocked" must be given. In the case under consideration the line was not clear to the home-signal; on the contrary the tail of the goods train was 270 yards outside it. Moreover, Regulation No. 6 lays down that the tablet is not to be returned to the instrument until the whole of the train is clear of the section, and if Roberts had obeyed this instruction he would have been unable to release a second tablet at Ellesmere for the use of the special train, until the goods train had drawn inside the protection of the Bettisfield up home-signal. But so long as the goods train or any portion of it was outside the home-signal, Roberts was prohibited by the rules and regulations from permitting any other train to leave Ellesmere, either with or without the warning signal, and his breach of these rules, on the observance of which the whole principle of absolute block working depends, constitutes a serious offence.

Station-master Roberts has been in the Company's service for 21 years, and has been station-master for about 15 years. He had been on duty for 11 hours 55 minutes at the time of the collision.

Driver Charles Williams contributed to the collision by allowing his fireman to give up the train tablet to the station-master while his train was still fouling the single line 270 yards outside the home-signal. It was the driver's duty to retain possession of the tablet until his train had reached the end of the section, and this would only be the case when the whole of the train had passed the home-signal. He had been on duty 9 hours and 21 minutes at the time of the collision.

Nor is driver Edward Griffiths of the special train blameless in the matter. On approaching Bettisfield he saw the up distant-signal at danger, at least 200 yards before reaching it, and he should at once have taken steps to bring his train under proper control, so as to be able to stop either at that signal, if necessary, or at any obstruction which might exist between it and the home-signal. (Rule 47, General Rule Book.) Had he done so, he would have been able to stop short of the goods train, the rear van of which was standing 250 yards inside the distant-signal or 450 yards (of which half was on a rising gradient of 1 in 80) from the point where Griffiths acknowledges he first saw the distant-signal at danger. My impression is that Griffiths made no attempt to stop his train at the distant-signal, and that he expected to find the home-signal lowered for him so as to permit him to run up to the starting-signals before he came to a stand. When he first saw the obstruction in front of him, he was 150 yards from it, and it was too late to avert the collision. It is probable that he was travelling at a greater speed than 10 miles an hour, as stated by him, and it is evident he was keeping a bad look-out. He had been on duty eight hours and 21 minutes at the time.

It is my duty to draw attention to the booked hours of these two drivers. Driver Williams booked on at 8.30 a.m. on the 5th March to work till 8.45 p.m., and Driver Griffiths booked on at 9.30 a.m. to 9.10 p.m., their hours of duty 12 hrs. 15 mins. and 11 hrs. 50 mins respectively. These hours are too long for any driver, and especially so in the case of men working goods trains, which probably do not run time, in which event the booked hours would be exceeded.

Since this collision the general manager of the Cambrian Railways Company has issued the following special instruction on the subject of shunting outside the home and advanced starting signals, viz.:—

"No train must foul the single line after permission has been given for a train to enter the other end of the section; nor, in future, must a train foul the single line outside the home or advanced starting-signal, for shunting purposes, unless the engine-driver is in possession of the tablet for the section so fouled."

This is satisfactory, but it would seem desirable to omit the word "advanced" before "starting-signal," so that the last portion of the rule would read thus, "nor, in future, must a train foul the single line outside the home or starting signal, for shunting, &c."

But rules and regulations are of no avail unless they are carried out. It was to the non-observance of the existing rules that the present collision was due, and unless a railway company takes pains to enforce at all times strict compliance with the

authorized rules and regulations, the chief responsibility, when a disaster occurs, must rest upon the company, rather than upon the servants who have been allowed to drift into irregularities.

I have, &c.,
H. A. Yorke,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Engine of Special Train.

Buffers broken and buffer-plate badly bent; platform, splasher, bent; wheel-guard bent and broken; the large centre-casting and slide of bogie smashed; the brake-cylinder and the whole of the brake-rigging more or less broken up; one eccentric strap broken and one bent.

The tender received but little damage.

Printed copies of the above Report were sent to the Company on the 16th April.

CHESHIRE LINES.

Board of Trade, (Railway Department.)
8, Richmond Terrace, Whitehall, London, S.W.,
17th April 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in accordance with the Order of 28th ultimo, the result of my enquiry into the collision that occurred on the 21st idem at the Central station, Manchester, on the Cheshire Lines.

In this case, as the 7 p.m. passenger train ex Warrington was approaching the Central station on the old up line at 7.40 p.m., it was run into by a light-engine which had been allowed to leave No. 5 platform on its way to the old down line and thence to the engine turntable.

Twenty-five passengers are reported to have complained of shock and other minor injuries.

The train consisted of a four-wheels coupled passenger engine, six-wheeled tender, and nine passenger vehicles, having a brake-compartment at each end. It was properly fitted throughout with the automatic vacuum-brake, which was in good working order.

The light-engine was also a four-wheels coupled passenger engine, with a six-wheeled tender, fitted with the automatic vacuum-brake. It was running out of the station tender first.

Both engines and tenders and four of the leading vehicles of the train suffered a good deal of damage, for details of which *see* Appendix.

The trailing wheels of the engine and the leading wheels of the third-class brake next the engine were thrown off the rails.

No damage was done to the permanent-way.

Description.

The Central station, Manchester, contains eight platforms, all of which are signalled for arrival and departure, and there are also various shunting signals to control the movements of light-engines and empty trains into and out of the station. There are four running lines approaching the station, viz., the old up and down lines and the new up and down lines, and there is also a shunting line, known as the middle road, between the old and new lines.

Fifty yards outside the station is situated signal-cabin B (known also as the station-cabin), and 155 yards from this cabin there is signal-cabin A.

The collision took place 23 yards on the station side of cabin A, the train engine having just passed through No. 27 facing-points, which were pulled over so as to allow the train to proceed from the old up line, on which it was travelling, into No. 2

platform. The light-engine, which had brought the 6.30 p.m. express train from Liverpool to Manchester, had been standing at the end of No. 5 platform until the signalman could permit it to leave the station for the turntable, where it had to be turned preparatory to working the 8.30 p.m. train back to Liverpool.

The arrival signals for the various platform lines, which are worked from B cabin, are situated just outside No. 27 points, and the departure-signals, worked from the same cabin, are situated at the outer ends of the different platforms. Absolute block working ceases at A cabin, from which place up to the end of the station permissive block is in force, the Company having obtained the necessary authority from the Board of Trade for this arrangement. The arrival signals at A cabin are slotted from B cabin in such a manner that it is not possible for the signals at A to be lowered until the road has been made, and the proper signal lowered by the signalman in B cabin, for whatever platform an incoming train is to run to.

B cabin contains 103 working levers, and though it has no block instruments it is provided with bells, and electric repeating dials which show the position of the indicators or needles of the block instruments in A cabin. Two men are employed in the cabin, and the hours of work are eight.

Evidence.

Alfred Shalcross, signalman, states: I have been in the Company's service about 11 years and all the time signalman. I have been nine years in B cabin, Central station. I have been all the time in charge of it. On the 21st March I came on duty at 2 p.m. for an eight-hour spell. It is an eight-hour box. I have an assistant with me all the time. The engine that brought in the 6.30 p.m. express from Liverpool was standing at the bottom of No. 5 platform. The return train having been taken out by another engine at 7.30. We let a train from No. 1 platform at 7.33 and then another train from No. 6 at 7.35. I then received orders from the foreman to let the engine out of No. 5 for the turntable. At the same time I passed the order on to my assistant, and in the meantime I got "On line" for the 7 p.m. train from Warrington on the old up line. This would be about 7.36. Permissive block is worked between A and B cabin, and there are bell and dial repeaters in B cabin to show what trains are approaching A cabin, and the dials in my cabin showed the train as "On line" at about 7.36. I then set the road for the incoming train, pulling over 27 points, 26 lock-bar, 30 points, 33 lock-bar, 34 points, 35 lock-bar. I then lowered No. 12 signal and pulled No. 2 lever, taking the slot off the home-signal of A cabin. I then waited by my instruments, my mate having attended to the levers required to let the light-engine out of No. 5. I saw the engine passing the cabin, but I did not notice it was on the wrong road till my mate shouted to me. He said, "stop that engine, he is on the wrong line." I ran to the window, but the engine was past, and I shouted to the foreman, telling him the engine was on the wrong road. I saw the train approaching, and knew the collision was unavoidable. The engine passed my cabin at about six to eight miles an hour. It was dark at the time. As soon as I saw what had happened I told my mate not to move any levers and give no signals of any description. I then went outside to see what roads were blocked. When I came back I took down all the levers that were over in the frame. I found 25, 26, 27, 30, 33, 34, 35, 42, 54, 57, 58, 60, 77, 89 over. I then saw that No. 60 lever was not required, but 59, which should have been pulled, was back in the frame. I had no idea previously that when 27 was over with 53 back in the frame, No. 89 could be pulled unless 59 was over, and this is how it should be. The frame in the cabin is a new one, put in August 1893. I was in the same cabin before the new frame was put in. The driver is not warned in such cases by the signalman in the cabin as to where he is to go.

George Minett, assistant signalman, states: I have been in the Company's service four years last November, and signalman all the time. I have been in B cabin, Central station, since August 1893. On 21st March I came on duty at 2 p.m. for an eight-hour spell. About 7.37 p.m. on the 21st I got orders from my mate to let a light-engine out of No. 5 platform on to the turntable road. I at once pulled 54, 58, 57, 60, 77, and 89. I knew at the time that the train was coming in on the old up road, and had I set the road right there could have been no collision. As the engine passed the cabin I saw it was on the wrong road. I at once called out to my mate, "Stop that engine; she is on the wrong road." He had a better chance of attracting the driver's attention than I had, but he was too late. The engine may have been going about eight or nine miles an hour. I saw the train approaching, and knew that a collision was inevitable. I feel quite sure that I pulled 60 by mistake, meaning to pull 59. I never found out before that No. 89 signal could be pulled when 27 is pulled and 53 back in the frame. There was no occasion to use No. 60 lever at all, and I fully thought that I had pulled 59.

Thomas Drury, driver, states: I have been in the Company's service about 18 years, and I have been 10 years driver. On the 21st March I came on duty at 3.30 p.m. I was due to book off at 1.30 a.m., but I was detained till 6.30 a.m. in consequence of the collision. On the 20th March I came off duty at 1.20 a.m. I was driver of the 6.30 a.m. train ex Liverpool, due at Manchester 7.15 p.m. My engine was No. 313 six-wheeled engine, with four wheels coupled, and six-wheeled tender. We came in chimney first. The engine is fitted with the automatic vacuum-brake, working blocks on four coupled wheels of the engine and all the wheels of the tender, and there is a hand-brake on the tender. We waited at the end of No. 5 platform for about 20 minutes, my train having been taken away by another engine. I waited there till I saw the shunt-signal lowered for me to come away, and I expected to get out on to the down line on my way to the turntable, where I had to go to turn my engine. I was to have taken the 8.30 p.m. train to Liverpool. I did not find out I was on the wrong road till I was opposite the signal-box. I then thought I was going on to the middle road. Sometimes we are put on the middle road, and then get direct on to the turntable through No. 19 points. I was prepared to stop at the shunting-signals applying to the middle road near A cabin. I passed out of the station at about five or six miles an hour. I shut off steam before I got out of the station. I did not see the incoming train till I was five or six yards off it. I had previously applied my brake in order to stop at the

shunt-signals. I applied my brake hard at once, but I had not time to reverse my engine. I was only just moving when I struck the other engine. I stuck to my engine and so did my mate. I was slightly bruised on the hip and elbow. My mate was hurt on the head. I only once previously have been turned into the middle road to get on to the turntable with a light-engine. I did think it was not usual for me to be sent on that road. I was keeping a sharp look-out as far as I could. I heard no one shout at me as I passed the cabin. It was a dark night. I had a proper head-light on my tender on the right-hand side of the tender as I was running.

John Todd, driver, states: I have been in the Company's service over 20 years, and 12 years driver. On 21st March I came on duty at 1.35 p.m., and I was due to bookoff at 11.35 p.m., but I was detained till later on account of the accident. On the 21st March I was working the 7 p.m. slow passenger train ex Warrington. On approaching Manchester all the signals for the road I was on were off for me, including the distant. I shut off steam half way between the distant and home signals of the viaduct cabin. When I passed A cabin I was travelling about nine miles an hour. When I was about five yards off I saw the light-engine. I had just time to apply the brake when that engine struck mine. I did not see any lights on it. I was not injured at all, nor was my mate. The trailing wheels of my engine and leading wheels of the vehicle next the engine were off the rails. My engine is a six-wheeled engine, with four wheels coupled, and six-wheeled tender. It is fitted with the vacuum-brake, and hand-brake on tender. The brake was properly connected up throughout the train. The yard is lighted electrically.

Conclusion.

This collision was caused by the mistake made by assistant-signalman Minett, who was on duty in "B" cabin Central station Manchester, in pulling over lever No. 60, in place of No. 59, before lowering shunt-signal No. 89 to permit the light-engine to leave No. 5 platform line. Signalman Minett doubtless intended to pull No. 59 lever, which actuates the points leading from No. 5 platform line on to the old down main line, and had he done so before lowering 89 signal, the light-engine would have run out on to the old down main line, and would then have been able to set back on to the line leading to the turntable, this being the operation which the engine was intended to perform. No. 60 lever, which is of course the next lever in the frame to No. 59, merely actuates the "trap points" leading from C road (which is used for shunting purposes) and had no connection with the operation to be performed by the engine, though levers Nos. 59 and 60 should be and now are interlocked. No. 89 shunt-signal, which is situated at the end of No. 5 platform, reads for three different roads at the exit from the platform, viz. (1) on to the middle road if No. 50 points are pulled over; (2) on to the old up line, if Nos. 50 and 59 points are normal, and on to the old down line if No. 59 points are pulled over, and it was the last of these three routes which the light-engine was intended to take.

While assistant-signalman Minett was attending to the light-engine, signalman Shalcross was setting the road, and lowering No. 12 arrival-signal to enable the 7 p.m. up train from Warrington to run into No. 2 platform from the old up line, and while the train was travelling on the road so prepared, the only safe road for the light-engine to take on leaving No. 5 platform was that leading through No. 59 points on to the old down line, as both the other routes from No. 5 platform fouled the road on which the train had to run. The levers in the frame should therefore have been so interlocked as to render it impossible for No. 89 shunt-signal to be lowered to enable the light-engine to leave No. 5 platform by any other route but the safe one, viz., that leading on to the old down line through No. 59 points, while a train was approaching the station on the old up line. Unfortunately the locking in the signal-cabin was deficient in this respect, and it was possible to lower No. 12 signal to allow the train to enter the station from the old up line at the same time that No. 89 shunt-signal was lowered for the engine to leave No. 5 platform with No. 59 points in their normal position, thereby causing the engine to run out on the old up line, and meet the incoming train. Had the locking been correct it would not have been possible for signalman Minett to have made the mistake he did, as he would have been unable to lower 89 signal while a train was approaching on the old up line, unless No. 59 points were over, in which case the engine would have travelled on to the down line, without in any way interfering with or endangering the safety of the incoming train. Minett, as already stated, intended to pull 59 lever, but pulled No. 60 instead leaving No. 59 points in their normal position, and thereby produced the collision. But as signalmen in busy cabins have to rely to a very considerable extent upon the interlocking of the levers, and as the interlocking in this instance was faulty, I am unable to regard Minett as deserving of blame for the error he fell into.

Driver Thomas Drury of the light-engine seems to have shown a want of caution for not having pulled up his engine as soon as he found that he was on the wrong road. He knew he had to go to the turntable, and he discovered as he passed B

signal-cabin that he was not going the way he expected. Had he at once taken steps to pull up his engine he would most probably have averted the collision, which occurred 132 yards beyond the point where he acknowledges he noticed that he was on the wrong road. He excuses himself by saying that he thought that the signalman meant to put him into the middle road, from which access can be got to the turntable. But as the road he was on did not lead to the middle road, he had no reason whatever for supposing that he was intended to proceed to it, and as it is a very rare occurrence for an engine to reach the turntable *viâ* the middle road, Drury's excuse seems to me to be a lame one. It is true that he received the proper signal for leaving the platform, but drivers should be at all times cautious and vigilant and not trust to signals alone (General Rule 277), and this is especially the case in busy yards. In so far as driver Drury failed on this occasion to display that amount of caution which might fairly be expected of him, he must be held to have contributed to the collision. He had been on duty four hours and 10 minutes.

Since the collision the Cheshire Lines Committee have taken steps to remedy the defect in the locking, and it is now no longer possible for 89 shunt-signal and 12 arrival-signal to be lowered simultaneously, unless 59 points are pulled over.

I have, &c.,

H. A. Yorke,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Cheshire Lines Carriages.

Third-class brake 139.—Two middle bearers broken; two head-stocks broken; two buffers bent; two side-chains broken; one coupling bent; through train pipe broken; body shifted; wheel-bolts damaged.

Third-class, 398.—Four middle bearers broken; one head-stock broken; one lamp-iron broken; one diagonal split; body shifted.

Third-class, 23.—One head-stock broken; one draw-bar hook broken; one lamp iron broken; body shifted.

First-class, 588.—One buffer-casting broken; one head-stock split.

Damage to Manchester Sheffield and Lincolnshire Engines.

Train engine No. 312.—Engine buffer-plank and angle-irons on framing broken; steam chest-cover broken; left-hand cylinder-cover and lubricator broken; intermediate-buffers broken; engine-buffers broken; engine brake-rods and cross-bars broken; head-lamps broken; engine foot-plate broken; feed-pipes bent.

Light-engine No. 313.—Inside and outside framings of tender damaged; tender-tank badly damaged; tender buffer-plank and draw-bar box broken; tender foot-plate broken; trailing-tender axle bent; trailing axle-boxes and horn-plates broken; trailing brake-rods broken; intermediate-buffers and tender-buffers broken; casting under engine foot-plate broken; inside framings of engine bent; engine foot-plate damaged.

Printed copies of the above Report were sent to the Cheshire Lines Committee and the Manchester, Sheffield, and Lincolnshire Railway Company on the 3rd May.

GREAT NORTH OF SCOTLAND RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.
8th January 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 2nd instant, the result of my enquiry into the circumstances attending a fatal accident which occurred on the 29th ultimo, at Drummuir station, on the Great North of Scotland Railway.

In this case, as the 9.10 a.m. down mixed train from Keith to Elgin (consisting of engine and tender, three loaded goods waggons, one passenger luggage van, one first-class carriage, one third-class carriage, and one third-class brake-carriage), was entering Drummuir station at 9.27 a.m., it ran through facing points into the goods siding, and came into collision with one loaded and two empty waggons, standing coupled together on the siding, and drove them against the buffer-stops, over which two of the waggons were forced. The third waggon was thrown off the rails, but in the passenger train no vehicle left the rails, although the leading bogie-wheels of the engine were lifted on to some of the debris of the waggons.

The collision was not a violent one, and three passengers only complained of slight injuries, but driver Robert McWilliam, one of the Company's servants, who was riding upon the engine from Earl's Mill to Craigellachie, unfortunately jumped from the engine before the collision took place, and, falling in some unexplained manner under the train, was run over and killed, his body being found underneath the third-class carriage, the sixth vehicle in the train.

The only damage to the permanent-way was the displacement of the buffer-stop, and the damages to the rolling-stock, details of which are given in an Appendix, were slight.

Description.

Drummuir is an old one-sided station on a single line, running from east to west, with one connection for a goods yard having facing points to down trains, but a new up loop with a second platform has just been completed, and will be brought into use in about a week, together with new signalling arrangements and inter-locked points and signals.

At the present time (as at the time of the accident) the only down signals in use are a distant-signal, 494 yards from the facing points of the goods siding, a repeater distant 124 yards from these points, and a starting-signal.

The points are 245 yards east of the station, and are worked from the ground by means of a weighted lever on the down side of the line, which lever can be secured in either position by a padlocked hasp. The distant-signal is worked from the ground by a lever placed exactly opposite to the points, and on the up side of the line.

The repeater distant is worked by the same lever on a return wire.

There is no interlocking between the points and signals, and there are no safety points on the siding, although there is a wooden chock-block.

Approaching the station from the east, the line is upon an easy curve, and upon a rising gradient of 1 in 632.

The siding is 243 yards in length from the points to the buffer-stop, the east end of the waggon was 35 yards from the buffer-stop, and 208 yards from the points, and the man who was killed was picked up 44 yards east of the waggon.

The point at which the engine should have stopped on the main line at the station is 303 yards west of the points.

The following are extracts from the Rules and Regulations of the Company as to the working of main line points and signals :—

Rule 46.

"On the approach of a train the signalman must satisfy himself that the line is clear for the advance of the train before changing the signal; when so satisfied he must turn on the caution-signal to allow the train to proceed."

Rule 85.

"When an approaching train has passed the distant-signal post, and the signal has been restored to danger, facing points are to be immediately set and firmly held, and the proper hand-signal exhibited by the pointsman until the whole of the train has passed over the points."

Rule 86.

* * * * * * *

"Men in charge of points must therefore be alert, and cautious in the discharge of their duties. They must also try the points before a train is due, in order to be certain that there is no impediment to their working. Where there are facing points these precautions become doubly important."

[Extract from the Appendix to the Working Time-table Book.]

Working of Main Line points and signals.

"The attention of agents, pointsmen, and porters, having to hold points regularly, or occasionally, is specially directed to Rules 46 and 86 of the Company's Regulations.

"Agents are particularly enjoined to impress upon men under them the absolute necessity of a strict compliance with these rules, and they must satisfy themselves by

personal observation that this is being done, reporting any neglect to the Passenger Superintendent.

"*Before the distant-signal is drawn to admit a train, the points are to be examined and tried to see that there is no impediment to their working.*

"To ensure compliance agents must see that the pointsman is at his post in good time to allow of his examining the points before the train is due."

Evidence.

James Blackie states: I am porter at Drummuir station, and have been two years and three months in the service of the Great North of Scotland Railway Company. I was on duty on the 29th December 1893, the day of the accident, but acting under legal advice I prefer to make no statement.

Alexander Ogilvie states: I am station-master at Drummuir. I have been 23½ years in the service, and nearly 10 years at Drummuir. The new loop, which is nearly completed, has not been brought into use, and the old platform line, only, is used for all trains. James Blackie is porter and pointsman, and has been at Drummuir all his service. He is a properly trained man, and I have found him always very attentive to his duties. He is in possession of one of the Company's rule books, which I issued to him myself. The staff at the station consists of myself, a clerk, and one porter, Blackie. Blackie has to attend to the points and signals all through the day, except the signals for up trains, which I attend to myself. I attend, myself, to the signals for trains, of which there are three, all up trains, passing after 5.45 p.m., at which time Blackie leaves duty. His daily hours are as follows:—He comes on duty at 4 a.m., and works through till 5.45 p.m., except at meals, for which he is allowed from 6.30 to 7.30 a.m., and from 11.30 a.m. to 1 p.m. He lives at about five minutes walk from the station, and he goes home to his meals. He is off duty every Sunday. During the day there are 10 up trains and 10 down trains. There may be shunting work to be done with three trains each day, but on the average it is done only with about two one way and one the other. My own hours of duty are from 6.30 a.m. to 7.30 p.m., and I have two hours off for meals. I live at about three or four minutes walk from the station. On the 29th December I came on duty at 6.30 a.m., and was on duty when the accident happened. The 7.10 a.m. up passenger train from Elgin arrived at 8.5 a.m. It had to cross the 7.40 a.m. down goods train from Keith, and as there is no proper crossing loop, it was drawn ahead past the siding points, and was shunted back on to the siding. It was Blackie's duty to hold the points when the train was backing in, and I believe he did so. I saw him go up to the points and the train got in all right. The 7.40 a.m. down goods train came in as soon as the passenger train was shunted, and did not stop, but passed at about 8.10 a.m. As soon as the goods train had passed, the passenger train started. I gave a signal for it to start as usual. It was Blackie's duty to shift the siding points for the train to go out on to the main line, and then he should have shifted the points again, and locked them right for the main line. The points are hand-worked points with a weighted lever, and there is a padlocked hasp to lock them in either direction. The lever working these points is on the down side of the line close to them, and the lever working the down distant-signal and the down repeater-signal is on the other side of the line, immediately opposite. After the train had gone away, it was the duty of Blackie to go and get the lamps from the down distant and down repeater signals, and to bring them back to the station. After doing this his next duty would be to clear up a cattle truck, and then to assist in unloading goods. I went to breakfast at 8.15 a.m. and came back at 9 a.m. When I came back he was on his way to do the unloading, and I went to assist. The work was finished at 9.10, and Blackie had nothing more to do until the 9.10 a.m. train arrived at 9.27 a.m. His duty in connection with that train was to go to lower the signals for it, after seeing that the points were in proper order, in accordance with Rules 85, 86, and 46, and to hold the points while the train was running in. Hitherto Blackie has always been most attentive in performing these duties, which he perfectly understands. On the morning in question the departure-signal for the 9.10 a.m. down train was received from Auchindachy at 9.21 a.m., and I went to look for Blackie and saw him at the end of the platform on his way to the points in good time. I went back into the office to get out the tablet for the train to proceed to Duff Town, but was on the platform when the train was approaching. I saw it approaching the facing points at about 9.30, but did not see where Blackie was standing. I did not see that the engine had run on to the siding at the points, until it was about 100 yards into it. There was no whistling. The engine was not steaming, and was, I should think, running at about the usual speed for coming into the station. I ran towards the engine and called out. The engine was at that time reversed, and steam was applied. Speed was reduced a great deal, but the engine struck three waggons, (one loaded and two empty, coupled together), which were on the siding, and drove them against the buffer-stops. Two of the waggons were driven over the buffer-stops, and the other one left the rails, and was greatly damaged. The leading bogie-wheels of the engine were lifted up above the rails, but were in line. No vehicle in the train left the rails. There were a good many passengers in the train, and three of them complained of injury. I did not see any person on the engine until after the the collision. I was on my way round to the siding when I was told that someone was seriously hurt, so I went back to the office and telegraphed for assistance. Driver McWilliam, who had, I was told, been riding on the engine and had jumped off, was brought into the waiting-room. He was dying or dead at the time. I cannot say what was the state of the brakes as the train was running in. The train got away at 10.53 with all the vehicles composing it, except the engine. There was a fresh engine brought from Keith. The points and signals are not yet interlocked, although the work is just completed, and there are not safety-points on the siding, but a chock-block. This chock-block had evidently been put back by Blackie after the 7.10 a.m. train had left the siding, for it was struck and knocked back by the engine of the 9.10 a.m. down train. Blackie had to pass the points on his way back with the lamps, and he could not have helped seeing how the points were lying if he had looked at them when he was standing at the distant-signal lever. The work at the station is not continuous. There are long intervals of rest. I have to assist at the work with goods waggons. There are no trains passing between 1.10 and 2.50, and very seldom anything to do at that time. Blackie is a very steady man, and he left duty at the usual time the previous day. He was with me in the evening at a meeting of a Mutual Improvement Society, held in the schoolroom close to where we live, which closed at about 9.30 p.m. Blackie had been off duty for three days in the previous week. He had a slight attack of influenza. He resumed duty

on the 25th December. He seemed rather weak, but he came back to duty by his own wish. He had recovered and got much better after Monday, 25th. He was quite fit for duty after Monday.

Andrew Black states: I have been over 37 years in the service and a driver for about 22 years. I have been driving on the Keith and Elgin section on and off for about 10 years, and I know it well. On the 29th December I came on duty at 6.45 a.m. to work till 5 p.m. Those were my regular hours that week, and I had left duty at 5 p.m. on the 28th. My engine (No. 75), is a four-wheel-coupled engine, with leading four-wheeled bogie, and an eight-wheeled tender, with a trailing bogie. The engine was fitted with a Westinghouse brake working blocks on the four coupled engine wheels, and on six wheels of the tender. I left Kittybrewster with the 6.50 train from Aberdeen, joining the train at Kittybrewster. My engine was in good order, and the brake, which I used on the journey as far as Keith, was in good order. At Keith I took on three loaded waggons next the engine, and the continuous brake was thus cut off from the train. The train when we left Keith consisted of engine and tender, three waggons, and four carriages. There were two guards with the train, one in the leading passenger vehicle and the other in the rear, each with a hand-brake. We stopped at Earl's Mill station in due course. After we had started I saw driver Robert McWilliam jump over the fence on the left side of the line and come down the slope, getting on to the engine as it passed. I did not know where he was going. After he had got up he told me, in answer to my question, that he was going to relieve a driver at Boat of Garten, and that he was late in coming to catch his train. Under the circumstances, although it was against the rule for him to be riding as a passenger on the engine, I did not like to stop the train and make him get off. He had his pass to ride as a passenger. He did not tell me at what time he had been warned to go to relieve the driver at Boat-of-Garten. We stopped at Auchindachy, but I did not make him leave the engine there. He would have had to do so at Craigellachie. Approaching Drummuir the distant-signal was lowered when I came in sight of it. I approached the siding facing points at my usual speed. There was no man at the points. Porter Blackie was standing at the distant-signal lever opposite to the points. He did not make any attempt to cross the line to the point-lever that I saw. His usual way of working is to stand at the signal-lever until the train has passed the repeater-signal, then to put it to danger, and then to cross to the points. I did not see the repeater-signal put to danger. I was about the length of the engine from the points before I saw that they were lying in the wrong direction. I was then running with steam off, and at a speed of about 15 miles an hour, with my train well in hand to stop at the proper place at the platform. My Westinghouse brake was not on at that time, nor was the tender hand-brake. As soon as I saw what was the state of the points I put the Westinghouse brake hard on, by which time I was on the siding. I got my brake on before my engine struck the chock-block, which was across the siding rails. I had not seen the chock-block, but I felt the blow. As soon as I had applied the brake I reversed the engine, and then applied steam. This was done before reaching the chock-block. The Westinghouse brake took effect on the train, but after I had reversed my engine the wheels began to skid, and the train did not pull up very quickly. My fireman opened the steam sand-blast, but that did not have the effect of preventing the wheels from skidding. I fully expected to stop the train before striking the waggons on the siding, and I think I could have done so if the wheels had not skidded. As it was I was still running at five or six miles an hour when the engine struck the waggons and drove them against the buffer-stop. My engine was right up to the buffer-stop when it came to a stand, with the front pair of bogie-wheels lifted up off the rails. When we entered the siding driver McWilliam did not speak to me. I was riding on my proper side, the left side, my fireman was on the other side, and driver McWilliam was behind us. He passed behind me and jumped off the engine. I saw him disappear, but did not see him actually jump. We were then running at such a speed that I was not at all alarmed about him. Any practised man should have easily got down safely at that speed. In my opinion there was no occasion for anyone to jump off at all. I got a bit of a shake from the collision, but nothing to speak of. I was struck by the handle of my reversing lever. When we had stopped the head guard came and told me that driver McWilliam had fallen under the train, and had been badly hurt. I did not see him lying on the ground, or where he was picked up. It was a soft day. The ground was not hard. The rails were very slippery. If the Westinghouse brake had been working on the train we could have stopped easily before striking the waggons. We had about 85 lbs. pressure. I expect that there must have been some pressure left in the carriage reservoirs, which the guards might have used. The porter uncoupled the engine at Keith. I did not sound my whistle for the guards' brakes.

Benjamin Adam states: I have been about 8½ years in the service, and a fireman for about six years. On the 29th December I was working as fireman with driver Black, and had been with him on the previous day. I have nothing to add to my driver's evidence, which I have heard read over, and which is, so far as I know, correct. Driver McWilliam did not speak to me after he entered the siding, nor did I see him jump. I was not injured by the collision. I saw Blackie at the signal-box as we were approaching. I saw him put the lever back and then make an attempt to cross, but we were then close on to him. I did not myself see that the points were lying in the wrong direction. I shook my hand at Blackie as we passed. He was on the up side, and he gave no signal to us. Our Westinghouse brake went on just as the engine took the points.

James Ross states: I have been about 25 years in the service, and a guard for 16 years. On the 29th December I came on duty at Keith at a little before 9 a.m. to work till 7.30 p.m. I had left duty at about 7.30 p.m. the previous day. I was guard in charge of the 9.10 a.m. train from Keith to Elgin, and was riding in the brake compartment of the rear vehicle. The train on leaving Keith consisted of engine and tender, three loaded goods waggons, passenger luggage van in which brakesman James Grant was riding, first-class carriage, third-class carriage, and brake third-class carriage. I had a hand-brake in my compartment, and there was a brake on the luggage van. There had been a Westinghouse brake in work through the train as far as Keith. The brake was cut off from the train by the waggons. I did not look at the Westinghouse gauge in my compartment to see what pressure, if any, was left in the carriage reservoirs. There are no instructions as to the use of the brake when it is cut off. We started at 9.10 a.m., and we stopped in due course at Earl's Mill and Auchindachy, which we left at 9.22 a.m. The signals were right for us to enter Drummuir, and we were approaching that station at our usual speed. I did not see the engine take the wrong road. I did not know it had done so till about when my van reached the points. At that time the speed was about 10 miles an hour, although it is difficult to say exactly. I put on my hand-brake as hard as possible. I had applied it slightly after passing the distant-signal. My brake took good effect. There was no whistle from the engine that I heard. The speed was not above five miles an hour, I should say, when the engine struck the waggons. I felt no shock. When the train came to a stand I got out. No vehicle was off

the rails or damaged. The passengers were all getting out. I went forward along the train. I found driver McWilliam lying under the third-class carriage across the left-hand rail of the siding, between the centre wheels and the trailing wheels. He was lying on his face. He was quite dead at the time. Assisted by some others I got his body out, and it was taken to the station. If I had known that there was any pressure left in the carriage-brake reservoirs, it would have been my duty to use it. It did not occur to me to do so. There were about 30 passengers in the train, I should say. There were three who complained of injury. I knew driver McWilliam was on the engine. I saw him getting on at Earl's Mill.

James Grant states: I have been 6½ years in the service, and five years a brakesman. On the 29th December I came on duty at 9 a.m. at Keith, to work till 7.25 p.m. I had been on the same hours the day before. I was riding in the front van of the 9.10 a.m. train and I had a hand-brake. I knew that the Westinghouse brake had been cut off from the train by the waggons being taken on. As we started I looked at the Westinghouse brake gauge in my van, and there was a pressure shown of 55 lb. I looked again between Auchindachy and Drummuir, and the pressure was then down to 30 lb. I did not see driver McWilliam get up on the engine at Earl's Mill, but I saw him on the engine at Auchindachy. Approaching Drummuir we were running at the usual speed with the train, which is always a mixed train. The signals were right for us. I applied my brake slightly, as usual, after passing the distant-signal. I did not see porter Blackie at the signal-lever or points. I did not know that the engine had run on to the siding until my van took the points, at which time, as near as I can estimate, the speed was not above 10 miles an hour. I did not feel any sudden check from the driver applying his brake. I at once applied my hand-brake as hard as I could. I did not think of using my Westinghouse brake, for which I am sorry. I was rather flurried, and went to my hand-brake instead. I then looked out of the window at the left side, forward, and then back. I saw McWilliam lying across the left rail under the third-class carriage. I saw one wheel pass over him. This was after the engine had struck the waggons, the speed then being from three to five miles an hour. When we had come to a stand I got out. I went back to McWilliam. My guard came up about the same time. I assisted to take McWilliam out. He seemed quite dead at that time. He was lying face downwards. I cannot explain how how he jumped or how he fell. I have seen men get safely down from engines running much faster than we were running after entering the siding. I felt no shock at all from the collision.

Robert Lyon states: I am cattleman in the service of the Company, and have been 26 years in the service. On the 29th December I was riding from Keith to Drummuir as a passenger in the front brake-van. Approaching Drummuir there was nothing unusual in the speed. I did not know that the engine had run up the siding until the brake-van had crossed the points, and I at once called to brakesman Grant to put on his brake, which he did at once. It never struck me to apply the Westinghouse brake. I had not noticed the pressure on the brake-gauge. I estimate the speed when the van passed the points at 8 to 10 miles an hour, and the speed at the time of collision at about four miles an hour. There was not much shock. I did not see Blackie at the points or signal-lever. I did not see McWilliam jump off. The brakesman cried out that there was a man hurt, and I thought it could have been nowhere but on the engine, so when we stopped I went there first.

James Murray states: I am carriage inspector and have been 15 years in the service. On the 29th December I was riding in the first-class carriage in the 9.10 train from Keith. There was nothing unusual in the speed when approaching Drummuir. The first I knew of anything wrong was from feeling a slight shock from the collision. The speed was then about six miles an hour, I should say.

Charles McPherson states: I am a carpenter in the employment of the contractor engaged in erecting the new station buildings at Drummuir. When the accident happened on the 29th December I was standing at the back of these buildings. I saw the train entering the sidings. It was not running very fast. I watched it after it entered the sidings, and I saw driver McWilliam jump off the engine a good piece before the engine struck the waggons. He jumped off the foot-plate, and did not go down on the step. I saw him come down on his hands and knees, but I did not see how he got under the train. He landed quite clear of the train. I could not estimate how fast the engine was running at the time, but the speed was not high, although it must have been much faster than I can walk.

Conclusion.

It is obvious, not only from the evidence, but also from the condition of the permanent-way and from the course taken by the whole train, that the facing points leading to the goods siding at Drummuir were lying directly for the siding, and were not half open, when the 9.10 a.m. down train from Keith arrived at 9.27 a.m., and came into collision with the goods waggons standing upon the siding 208 yards inside the points.

The points were apparently last moved at about 8.10 a.m. when the 7.10 a.m. up passenger train, which had been shunted into the siding at about 8.7 a.m. to allow the 7.40 a.m. down goods train to pass, started for Keith, and there is no reason to doubt that porter James Blackie shifted the points upon this occasion, as it was his duty to do, or that, after the train had started, he went to bring in the distant-signal lamps, and then attended to other work until the 9.10 a.m. down train was signalled from Auchindachy at 9.21 a.m., when he was seen by the station-master going out from the station to the points.

It was his duty to lower the signals for the down train, after first "trying and examining the points to see that there was no impediment to their working," and then, after restoring the signals to danger, to hold the point-lever in the proper position while the train was passing over the points.

That the signals were lowered and restored to danger is unquestioned, but the evidence shows that porter Blackie did not cross over the line from the signal-lever to hold the point-lever, although he seems to have made an attempt to do so, and,

judging from the course taken by the train and from the evidence of the driver as to the position in which he saw the points lying, it is only too evident that porter Blackie omitted to secure the points in the proper position for the main line after the departure of the 7.10 a.m. up train, and omitted also to examine and try them before lowering the signals for the 9.10 a.m. down train.

The entry of the train into the siding, which led to the collision, must therefore be attributed to a breach of the rules by porter Blackie, who no doubt was under the impression that he had locked the points in the proper position after the 7.10 a.m. train had left, and forgot to look at them before lowering the signals for the 9.10 a.m. train, for as, when at the signal-lever, he was exactly opposite to the points and only about 15 feet from them he could not have missed seeing how they were lying if he had looked at them. It is difficult to understand how he could have made such a mistake, seeing that he had probably passed over the points on his return with the distant-signal lamp, for the chock-block on the siding had certainly been replaced across the rails after the departure of the 7.10 a.m. up train from the siding, and this must have been done by him.

Porter Blackie, who had at the time been on duty for $5\frac{1}{2}$ hours, bears an excellent character for carefulness in the performance of his duty, but it is stated that he had only just recovered from an attack of influenza, which may in some slight degree account for his forgetfulness on this occasion, although he had returned to duty four days before at his own request.

It must also be mentioned that the distance of the repeater distant-signal from the points, viz., 124 yards, is so small that, unless he was smart, it was not very easy for him to cross to the points in front of a train running pretty fast, in order to hold the point-lever after restoring the signal to danger, but this would not, probably, have mattered much if he had secured the points in the proper position before lowering the signal.

The driver detected the position of the points when about 15 yards from them and when he was running probably at about 15 miles an hour or perhaps a little more, with steam off, and yet, although he applied the Westinghouse brake on the engine, and reversed, and applied back steam, while the rails were sanded by the fireman, he was unable to reduce the speed to less than five or six miles an hour before striking the waggons, 208 yards from the points. He naturally expected to stop short of the waggons, and he would probably have done so if the rails had not been very greasy, and if the wheels of the engine had not skidded, or if either the guard or the brakesman had made use of the Westinghouse brake upon the passenger carriages, as they ought to have done, seeing that there was still remaining a pressure of nearly 30 lbs. in the carriage reservoirs, and as possibly they might have done if the driver had whistled for the brakes.

What is quite certain is that if the Westinghouse brake on the passenger carriages, which had been in use on the journey from Aberdeen, had not been cut off when three goods waggons were coupled on next to the engine at Keith, the driver would have had no difficulty whatever in stopping short of the point of collision.

The poor man, driver Robert McWilliam, who was killed, was going to Boat-of-Garten, as a passenger, to relieve another driver, and, as he was late in arriving at Earl's Mill station, he got over the fence of the railway, ran down the bank, and got on the engine after it had started. He did not change into a passenger carriage at Auchindachy, but remained on the engine in contravention of the rules of the Company, and jumping off the footplate, when about 44 yards from the waggons, rolled under the train and was killed on the spot. His action in jumping from the engine was most unfortunate, for if he had remained where he was he would almost certainly have escaped without injury, and it is very extraordinary that an experienced man should have endeavoured to get off the engine at all, or that, if he decided to do so, he should not have got down on the step and then dropped off, which he could easily have done with safety, the speed at the time not being above 10 miles an hour at the outside. Under the rules of the Company driver McWilliam ought not to have been upon the engine at all, and although, under the circumstances, driver Black can hardly be blamed for allowing him to get up at Earl's Mill, he ought to have made McWilliam change into a carriage at the first stopping place, Auchindachy, in which case the life of this man would not have been sacrificed.

Driver Black had at the time been on duty for $2\frac{3}{4}$ hours; guard Ross had been on for two hours; and brakesman Grant for half an hour.

I must now draw attention to two facts which can hardly be disputed; first, that if the points and signals at this station had been interlocked the accident would not

have occurred; and secondly, that the collision might easily have been averted if the driver had had under his control the Westinghouse brake upon the four passenger vehicles in the train, as well as that upon the engine.

The time allowed by the Board of Trade Order, issued under the Regulation of Railways Act, 1889, for the completion of the interlocking upon this line, and for compliance with the conditions in regard to the use of a continuous automatic brake upon all passenger trains, and upon all passenger vehicles in mixed trains, has expired; and, although an extension of time for the completion of interlocking, which the Company applied for some months ago, will probably be granted when the Company has supplied some further detailed information, asked for at the time of the application, as to the amount of work they have already carried out, no sufficient reason has been advanced why passenger trains and mixed trains should not now be running with continuous brakes in use upon the passenger vehicles in accordance with the Act.

No list of proposed mixed trains has yet been submitted by the Company for the approval of the Board of Trade, and after the 6th December 1893, under the strict reading of the Order, and failing an approved list of mixed trains, all trains carrying passengers must be considered to be passenger trains, which should be fitted, as such, with continuous brakes in the proportions laid down in the Order.

It is therefore apparent that although this fatality was immediately due to breaches of the rules on the part of servants of the Company, it was the result of a non-compliance with the Board of Trade Order, from the terms of which the Company had not at the time been in any way exempted.

I may add that the interlocking at Drummuir, where a new loop has been constructed, is now actually complete, and that at the date of the accident there was little work left to do beyond the connecting up of the points and signals.

When the new signal-cabin has been opened there will be an additional man at this station, which will enable the hours of duty to be modified.

I have, &c.,

F. A. Marindin,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Statement of Duties performed by Robert McWilliam during the week commencing 25th December 1893.

Relief driver Robert MacWilliam entered the service of the Company as a cleaner on the 14th June 1882, was promoted to be a fireman on the 19th January 1885, and was passed as a driver on the 29th December 1890.

His duties commencing from Monday the 25th ult., were as follows:—

Monday, the 25th ult. Tuesday, the 26th ult. Wednesday, the 27th ult. Thursday, the 28th ult.	On duty daily from 6 a.m. to 6 p.m. Assisting fitter, and doing general running shed work.
Friday, 29th ult.	A pass was handed to him by his foreman, J. Davidson, at Keith, on Thursday evening, for himself and fireman to travel as passengers from Keith to Boat-of-Garten by the 9.10 a.m. train on Friday morning, to relieve driver McKenzie and fireman McDonald who were to come to Aberdeen as passengers.

McWilliam had no shed duties to perform before leaving by the train. He went to Earl's Mill, which is three-quarters of a mile distant from Keith, and it is supposed that he did this owing to his house being nearer to this station than to Keith. His fireman travelled as a passenger in the train from Keith. McWilliam being late at Earl's Mill ran down the bank a short distance beyond the station platform, and jumped on to the engine when the train was in motion.

He was 36 years old, single, and bore a good character. His father and mother lived with him, and I understand that he contributed to their support.

The train driver, Andrew Black, states that there was no sign or suspicion of drink about him.

Damage to Plant.

Engine No. 75.—Left leading bogie axlebox guide broken; engine footplate damaged at front of smokebox; right and left front buffers broken; front Westinghouse air-pipe broken; right and left bogie rail guards bent, and bolts broken; left outside engine framing broken; left front draw-link bent; front buffer-beam slightly damaged; smokebox hand-rail broken; smokebox door damaged; front plate of smokebox bent; head lamp-holder broken.

Waggons in Siding.

O. B., No. 72.—Two side beams, two end beams, two guide plates, two axleboxes, and end lining broken; two buffer-rods bent.

O. B., No. 1,707.—One side beam and one end beam split, one end beam and four axlebox undercovers broken; one buffer-rod bent.

O. B., No. 2,659.—Completely broken up.

Printed copies of the above Report were sent to the Company on the 21st April.

GREAT WESTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
28th February 1894.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 12th instant, the result of my enquiry into the circumstances attending an accident which occurred on the 23rd ultimo, near Upwey junction, on the Abbotsbury branch of the Great Western Railway.

In this case, as the 6 p.m. train from Weymouth to Abbotsbury, consisting of engine and tender (running tender in front), one third-class brake carriage, one composite, and one third-class brake-carriages, was rounding a curve to the left, about 140 yards from Upwey branch platform, from which it had just started, the leading wheels of the engine, as it was then running, left the rails, and ran with the right wheel close outside the right rail and with the left wheel in the 4-ft. way for a distance of 100 yards, when the train was brought to a stand.

No other pair of wheels left the rails.

No person was injured, and the only damage to the rolling-stock was the breaking of a sand-pipe on the engine.

In the permanent-way 17 bracket-chairs, 11 fish-bolts, one fang-bolt, and 10 tie-rods were broken.

Description.

At Upwey junction, near Weymouth, the Abbotsbury single line branch diverges towards the left from the main line, here running towards the north on a rising gradient, the facing-points of the double junction being on the up main line.

The junction is about 150 yards south of the station, and the branch line platform is at the back of the up main line platform, upon a slightly lower level.

The branch line from near the end of the platform is upon a steep falling gradient, and a very sharp curve to the left, the parliamentary gradients and curves from the junction past the station being as follows:—

Gradients.—Falling 1 in 71 for 3·50 chains, level (along the greater part of the platform) for 6·50 chains, and falling 1 in 44 for 22·20 chains.

Curves.—15-chain radius to the left for 1·86 chains, straight for 2·45 chains, 20-chain curve to the right for 2·70 chains, straight for 5·10 chains, and 12-chain curve to the left for 13·70 chains.

At the actual point where the engine left the rails the line is on an embankment, the extreme height of which is 37 feet, the gradient is a falling one of 1 in 44, and the curve, nominally a 12-chain curve, had a radius of only $8\frac{1}{2}$ chains.

The curve, which is a correct 12-chain curve at the commencement close to the starting-signal, gradually gets sharper, until reaching a point about 50 feet from the point of derailment, when it becomes an $8\frac{1}{2}$-chain curve, for a short distance, after which it improves. There is no check-rail. The cant is about four inches, and the gauge is a little over a quarter inch slack, and both are even and regular.

The first marks of derailment were upon a sleeper, 114 yards from the station starting-signal, 175 yards from the place from which the engine started, and 179 yards from the commencement of the 1 in 44 gradient. Here there was a mark on the sleeper $4\frac{1}{2}$ inches inside the left rail, and one upon the stiffener of the bracket chair outside the right, or high rail. There was no mark of the flange of the right wheel running up and over the right rail.

The line was made by an independent Company in 1885, and the permanent-way is the same as it was then, except that some additions have been made in order to strengthen it.

It is composed of steel Vignolles rails, in 29 feet lengths, weighing 75 lbs per yard, fished at the joints, and fixed to transverse creosoted sleepers, 9 ft. in length and 10″ × 5″ in section, by fang-bolts and dog-spikes placed alternately inside and outside the rail, there being one dog-spike and one fang-bolt to each rail on every sleeper, except at the joints, where all the fastenings are fang-bolts. There are 11 sleepers to each rail length, and the line is ballasted with broken stone and gravel.

After the line was opened some wooden chocks were placed outside the high rail on the curve, in order to keep this rail in position, and shortly after the line was acquired by the Great Western Railway Company in 1886, wrought iron tie-rods were added at every joint on the curve, in order to preserve the gauge, and two iron bracket chairs were fixed outside each rail on both sides, in place of the wooden chocks.

Since that time nothing has been done to the line except ordinary repairs.

The engine, which left the rails, was a six-wheel coupled goods engine, No. 52, with a six-wheeled tender.

It was built at Swindon in 1872, and was last in the shops from September 14th, 1893, to January 10th, 1894, when it was thoroughly repaired, and was fitted with a new boiler and new cylinders.

Up to the 14th September 1893 it had run 473,151 miles, and between the 10th January 1894 and the date of the accident it had run 393 miles.

Since it recommenced running it had, before the accident, passed over the Abbotsbury branch 16 times.

The weights and wheel-base of the engine and tender are as follows :—

Weights.

	Tons.	Cwts.
Engine.—Leading wheels	12	4
Driving	12	4
Trailing	8	6
Total	32	14

	Tons.	Cwt.
Tender.—Leading wheels	6	12
Centre	6	14
Trailing	6	14
Total	20	0

Wheel-base.

	Ft.	Ins.
Engine.—From leading to driving wheels	7	4
From driving to trailing wheels	8	4
Total	15	8

	Ft.	Ins.
Tender.—From leading to centre wheels	6	0
From centre to trailing wheels	6	8
Total	12	8

Evidence.

Fred Brooks states: I have been about 11 years in the service, and a guard for nearly six years. On the 23rd January I came on duty at Abbotsbury at 9.20 a.m to work until 9.5 p.m., on the Abbotsbury branch. I had left duty the previous day at 9.5 p.m. There are six trains each day, and I work all except the first. I was guard of the 6 p.m. train from Weymouth to Abbotsbury, which was made up as follows. Tender-engine, running tender first, third-class brake-carriage, composite, and third-class brake-carriage in which I was riding. There was a vacuum automatic brake in good order working all through the train. We left Weymouth at right time, and stopped at Upwey branch platform. We started again at 6.7 p.m. right time. After running for a little over 100 yards, I heard an unusual noise. I looked out on the left side, but by the time I had done so, we had come to a stand on the embankment. I got out and went forward. I found that one pair of the engine wheels were off the rails. No other vehicle had left the rails, nor had the tender. There were 15 or 20 passengers in the train, and none were hurt. The engine which was on the train was not the regular engine, which is a side-tank bogie-engine. This goods engine had been working for a day or two on the branch. The speed at the time the accident happened was about 6 miles an hour. The brake was applied suddenly just as I heard the unusual noise. The brake-gauge was showing 25″ of vacuum. The valve on my van was opened by the application of the brake. I examined the road and there was nothing wrong that I could see. There was no

obstruction on the rails. I do not remember any previous accident at this place. There had been no complaint from the driver as to any difficulty in getting round the curve with that engine. It was a fine evening, dark, but with moonlight at the time.

Alfred Toins states: I have been nearly 37 years in the service, and permanent-way inspector for 17 years. I am in charge of the Abbotsbury branch among other portions of the line. I was over the branch on Wednesday 17th January, and at that time it appeared to be in good order. On the evening of the 23rd January I was informed of the accident, at Dorchester where I live, at about 6.30 p.m. I went to Upwey and arrived there soon after 7 p.m. The engine was still off the rails. I made a careful examination of the road at once, and again the next morning. The gauge was even all round the curve about a quarter of an inch wide. The cant was as nearly as possible even, about four inches. The first mark of anything amiss was a mark of a flange on a sleeper about 4½ inches inside the low rail, and a score on the stiffener of the bracket outside the high rail on the same sleeper. These marks continued more or less on every sleeper to the point where the engine stopped, just 100 yards from the first mark. The gauge was not spread in any place, and has not been altered since. There were no dog spikes broken, and the only fang-bolt broken was one in a bracket between the first mark and the engine. Between the starting-signal at Upwey and the first mark, a distance of 114 yards, there was nothing wrong at any place. There were no low joints, and there was nothing on or near the rails which could have thrown the engine off. The engine is not one of the usual branch engines. It is a six-wheel-coupled goods engine. I think that it was rather too long an engine for that curve. There have, however, been many such engines on the branch before, goods and passenger. The line was opened in 1885, with the same permanent-way as there is now. The Great Western Railway Company took it over in November 1886, and some time after that, perhaps five or six years ago, there were added on this curve wrought-iron ties at each joint, and bracket-chairs, two outside each rail. The rails are 29 feet long, and the original fastenings were fangs and clips and dog-spikes, one of each to each rail or every sleeper, alternately inside and outside. The tie-rods pass through the fish-plates. There are 11 sleepers to each rail length. There has been nothing else done on this curve since the line was opened, except ordinary repairs, and new sleepers when required. I think that some of the sleepers were new to which the bracket-chairs were fixed.

John Norman states: I have been about six years in the service, the last term as ganger. I was first in the service 40 years ago, but I have been in other services, among them that of the Admiralty at Portland for various periods. I am in charge of the Abbotsbury branch from the junction to the three-mile post, and have six men in my gang. I walk my length every morning. I live at Upwey. On the 23rd January I had walked the length in the morning, and was working near the Abbotsbury end of my length. I was not on the curve near Upwey after about 7 a.m., at which time there was nothing wrong. I think that the last time I did anything to the line at that point was about a fortnight before the accident. I was doing ordinary packing, and took up a slack or two. I make a point of gauging the line there once a week. I had done so four days before the accident, and the gauge was then correct. On the evening of the 23rd January I was at home when the accident happened, but went to the spot on being called, and arrived about 7.15 p.m. I examined the road directly I got there, but could find nothing wrong to have caused the accident. I found the marks where the engine-wheels had left the rails. I was with Inspector Toins when he made his examination; and I agree with his statement as to the condition of the line. I remember the brackets and the tie-rods being put on. This was soon after I came back to the service. I was in the service of the contractor making the line. He put some wooden brackets outside the high rails in about the same positions as the present brackets are on. These remained in position until the iron brackets were fixed. The wooden brackets were not provided until after the line was opened. They were provided because it was found that the gauge was inclined to spread a little. As far as I know the curve has not been altered since the line was opened, except that I may have slewed it a little to keep it in line.

Charles Woodthorpe states: I have been about 15 years in the service, and a driver since December 1892. I am stationed at Abbotsbury, and have been working on the branch since I commenced to drive. On the 23rd January I came on duty at 6.47 a.m. to work till 8.52 p.m. That is my ordinary day's work for each alternate day, and on the other days I work from 6.47 a.m. to 6.50 p.m. There is no work on Sunday. My fireman's hours are the same as mine. The longest interval between trains, of which there are six each way, is between 3.38 p.m. and 6 p.m. at Weymouth, but during that interval I am employed in shunting. Sometimes I get away from my engine for an hour. On the 23rd of January I had No. 52 engine. This is a six-wheeled coupled goods engine, with a six-wheeled tender, fitted with the automatic vacuum-brake, working blocks on every wheel of the engine and tender. That is not my ordinary engine. My engine is usually a tank-engine with a bogie in front. I have often before had a six-wheel coupled goods engine. I have never found any difficulty with these engines on the curve at Upwey. They go round as well as the tank-engines, and they run steadier on the branch than the tanks do. There is no engine turntable at Abbotsbury, and we usually run tender in front (with goods engine), from Weymouth to Abbotsbury. I was running in that manner when attached to the 6 p.m. train from Weymouth on the 23rd January. I had the same engine on the day before the accident, and on the Saturday before, so that it had run over that curve sixteen times. I started from Upwey branch platform at my usual speed, and was running at about five miles an hour round the curve when I felt the proper trailing wheels of the engine, then leading, drop off. I felt no previous lifting of the wheels, and no shock as if they had struck something. I had no steam on at the time. I at once applied my continuous-brake, and came to a stand in about 100 yards, no other wheels having left the rails except that pair. I had 25 inches of vacuum. After we stopped I went with my lamp to examine the road. I found the marks where the wheels had dropped off, but nothing wrong with the road behind that, and nothing near the rails which could have thrown the engine off. There was no mark on the side or top of the high rail. I have never felt anything amiss on that curve before. My engine was in beautiful order.

Henry Chick states: I have been about 14 years in the service, and a fireman for nearly 10 years. On the 23rd January I was fireman with driver Woodthorpe. I have heard his evidence, and have nothing to add to it.

Ernest Lucy states: I am locomotive foreman at Weymouth, where we have a repairing shop and 20 engines. The engines used as a rule on the Abbotsbury branch are bogie tank engines, but occasionally when these are in the shops we have to use tender engines, goods or passenger, as was the case on the 20th, 22nd, and 23rd January. On those days the branch was worked by No. 52 engine, a six-wheel coupled goods engine, with six-wheeled tender. This engine commenced with the 6 p.m. train from Weymouth on the 20th January, and I received no complaint as to its working during the following days. It has 5-ft. wheels and a wheel base of 15 ft. 8 ins.

I think there is a play of $\frac{3}{8}$ in. on the leading and trailing boxes. It came from Swindon, where it had just been thoroughly repaired, on the 17th January. It came in exchange for a worn-out engine. I examined it myself on arrival, and it was in first-rate running order. It was in good order before it went out on the 23rd January. I have examined it myself since the accident, gauging the wheels and examining the springs and axle-boxes. Everything is in good order and the gauge is correct—quite true. The engine has been working fast goods trains ever since the date of the accident. I was put on the line at 9.15 p.m. on the 23rd instant, and was brought back to Weymouth. We find that engines are a bit rigid sometimes when they first come out of the shops, the axle-boxes being rather tighter in the guides than they are after working sometime. I found, however, on running this engine after the accident that the axle-boxes worked quite freely.

Conclusion.

It is clear that this accident was due to the curve upon which it occurred, being too sharp for an engine with so long a rigid wheel base as 15 ft. 8 ins. to run round with safety in the absence of a check rail. Happening as it did upon a high embankment, it is most fortunate that the speed was very low, and that after the leading pair of engine wheels left the rails, the road was not in any way disturbed, for if the other wheels of the engine had also left the rails, it is more than probable that the train would have run off the embankment with very serious consequences.

The engine was running with the tender in front, and although this is not at all advisable as a rule, it seems likely that in this case the fact of the tender wheels being on the rails, in front of the pair of engine wheels which had run off, tended to keep the engine in line, and to prevent it from running off at a tangent over the edge of the embankment.

On the other hand the weight on the trailing-wheels of the engine, at that time the leading wheels, is so much less than the weights on the other pairs of wheels, that they were more likely to mount on the sharp curve than the proper leading-wheels would have been.

The engine was in first class order, but no doubt, being only just out of the shops after thorough repair, was more rigid and less likely to accommodate itself to a sharp curve than if it had been running for a longer time.

There was nothing to find fault with in the permanent-way, except that the curve was sharper at this particular point than it ought to have been, but it is quite apparent that the curve could never have been laid as a 12-chain curve, in accordance with the parliamentary plans. By some adjustment it might be made a more regular curve with a radius at no point less than 10 chains, and I would strongly recommend the Company—

1st. To relay the curve in this manner with a chair road, to fit a check-rail all round it, and to increase slightly the slackness of gauge.

2nd. To work passenger trains on the branch only with tank engines and as far as possible to avoid running six-wheel coupled engines upon it.

In conclusion, I must call attention to the excessive hours of work of the drivers and firemen employed upon this branch, viz.: 14 hours five minutes, and 12 hours three minutes on alternate days for six days in the week, while the hours worked by the guard are also too long. I submit that the Company should be called upon to furnish a revised schedule of working hours for the men, in accordance with the provisions of the Regulation of Railways Act of 1893.

I have, &c.,

F. A. Marindin,

Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

Printed copies of the above Report were sent to the Company on the 16th March.

HIGHLAND RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
24th April 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 3rd instant, the result of my enquiry into the circumstances attending a collision which occurred on the 28th ultimo at Tain on the Highland Railway.

In this case the 5.30 a.m. up mixed train from Helmsdale (consisting of engine and tender, one loaded cattle waggon, four loaded goods waggons, two close vans, one first-class and one third-class carriage and brake-van), when approaching Tain station at about 8.16 p.m., came into collision with the engine of the 5 a.m. down goods train from Inverness, which, with 12 waggons attached, was performing shunting operations on the single line outside the north loop points, and north of the up home-signal, and was at the time moving slowly back. The twelfth waggon, which had been uncoupled, was driven back along the down siding and over the stops, a cattle waggon full of sheep, the seventh vehicle from the engine, was upset, and the eighth, ninth, tenth, and eleventh waggons, which became uncoupled, were driven back along the siding.

In the up mixed train four of the goods vehicles left the rails, the two next the engine being badly damaged, and the front of the engine was lifted off the rails.

One passenger was very slightly injured, and the driver and fireman of the goods engine were slightly bruised and shaken.

In the permanent-way 24 chairs, 5 point connecting-rods, 6 fish-bolts, and 12 chair-spikes were broken, and some sleepers were damaged.

A full return of the damage to the rolling-stock is given in the Appendix.

Description.

Tain station, 44¼ miles north of Inverness is a passing station on a single line, with an additional up passenger dock line, and sidings at both ends of the loop.

There are two signal-cabins, the north cabin being on the down side of the line, and the points and signals are interlocked.

The goods yard is on the down side of the line north of the station, the goods yard trailing points on the down loop, being near to the north loop points.

The only signals to which it is necessary to refer are worked from the north cabin, and are—

1. The down shunt-signal close to the north signal-cabin.
2. The up home-signal, which is on the proper side of the line, 129 yards north of the cabin and 29 yards north of the north loop points.
3. The shunt-back-signal into the goods yard, which is alongside the up home-signal.
4. The up distant-signal, which is on the proper side of the line, 766 yards north of the up home-signal, and is electrically repeated in the signal-cabin.

The point of collision was 63 yards north of the up home-signal.

The line falls from the up distant-signal to the station on a gradient of 1 in 300, and is upon a very easy curve to the left.

In clear weather both the home and the distant-signal can be seen for over a mile.

The following distances northward from the centre of the station should be noted:—

	Yards.
To footbridge between platforms	30
To north signal-cabin	217
To goods yard points	277
To north loop points	317
To up home-signal	346
To point of collision	409
To up distant-signal	1,112

The railway is worked under block telegraph rules, all crossings of trains being arranged from the central office at Inverness; and, when this section of the line was opened, the Highland Railway Company gave an undertaking, dated 31st May 1864, that no two trains should be between Tain and Meikle Ferry, at that time the terminus of the lines, and the next block station north of Tain, at one and the same time.

The following extracts from the rules and regulations of the Company bear upon this case:—

"27. At stations where trains are appointed to cross, either by the time tables or by order of the superintendent of the line, they must approach such so as to be able to stop at the distant-signal, or at any point within it, as shunting operations may be going on, or the train from the opposite direction may have fouled the loop.

"28. The 'Block' telegraph-signals extend from the starting-signal of the one station to the receiving distant-signal of the station in advance, but where the distant-signal at the station in advance is at 'danger,' trains and engines are permitted, after coming to a stand thereat, to draw sufficiently within the same for protection,

provided the way in front is clear. From the distant-signal to the starting-signal, trains or engines are governed by the fixed-signals, or by hand-signals, as the case may be.

"40. Danger-signals, in all cases, take precedence of any other signals, and must never be violated. A train or engine, however, after coming to a stand at a distant-signal at 'danger,' may draw sufficiently within the same for protection, provided the way in front is clear.

"41. An out-signal, or the absence of a signal at a place where a signal is ordinarily shown, or a signal imperfectly exhibited, must be considered a 'danger' signal, and treated accordingly, and the fact reported to the signalman or stationmaster.

"59. The detonating-signal must be used in addition to the ordinary day and night signals in foggy weather and snowstorms, when practicable, and when unforeseen obstructions have occurred which render it necessary to stop approaching trains.

"253. Drivers must use great caution during snowstorms and fogs, or when, from any cause, the ordinary signals are not easily discerned; and they must be prepared to stop their engines when required. These precautions are especially necessary when approaching stations.

"283. Enginemen must sound the whistle on approaching every station, level crossing, or tunnel.

"288. All stations must be approached cautiously, particularly those where there are curves on the line."

Evidence.

Donald Brodie states: I have been nearly 21 years in the service as signalman, all the time at Tain. On the 28th ultimo I came on duty at 7 a.m. to work till 10 p.m. That is the tour of duty for one week, and in the alternate weeks the tour is from 6 a.m. to 6 p.m. One week we have an hour for dinner at 11 a.m., and an hour for tea at 5 p.m.; and the other week we are off from 9 to 10 a.m., and from 2 to 3 p.m. There is no train register kept in the cabin, which contains 13 working levers. I have nothing to do with the block-working, but we work under the orders of the station-master. At about 8.12 a.m. the 5 a.m. down goods train arrived. There was one waggon to throw off into the down siding, and two to lift. The engine, with about 12 waggons attached, drew out on to the single line, the down shunt-signal being lowered for it. I put back the down shunt, turned the siding-points, and pulled off the back shunt-signal. The engine had just started to move back when the up train, the 5.30 a.m. up mixed train from Helmsdale, arrived and came into collision. When I lowered the down shunt-signal for the train to go out on to the single line I did not know that the up train had left Edderton. If I had known I would not have allowed the down train to go out to shunt. I knew it was the time for the up train to be coming, but it was not my duty to find out where it was. There is not anything in the rules to prevent such an operation. I got no orders from anyone as to the shunting, but the brakesman told me what he had to do. My up signals were at danger, and the up distant-signal repeater in my cabin showed that the arm was standing at danger. It was standing so when I came on duty, and after that the lever was not moved at all before the accident happened. Immediately after the collision I looked again and it was still showing danger. The distant is a stop-signal. I heard no whistle from the up train. There was another engine standing opposite the cabin on the up siding. I did not see the two train engines meet. They met beyond the overbridge. I heard the collision. It was a close morning and very misty. I could only just see my up home-signal. Very soon after the collision the driver of the up train came to me and said that the distant-signal had been partly off. I told him it was showing danger in the cabin. There were no fog-signalmen out.

William Anderson states: I have been 22 years in the service, and have been station-master at Tain for 3 years and 5 months. I have charge of the block-working at the station, the instruments being in my office, and my clerk books all trains. We work block for all trains, the next block-station northwards being Edderton, 5½ miles distant. There is nothing in the rules under which we work to forbid the single line outside the loop being occupied by a shunting train, after an up train has been accepted from Edderton, so long as it is inside the up distant-signal, which we consider the block-signal. The block section on our line extends from the starting-signal at one station to the distant-signal at the next. On the 28th ultimo the 5 a.m. down goods train arrived at 8.10 a.m. I knew it had two waggons to lift, but I did not know what it had to put off. The engine came to a stand at the water column, and then, with my knowledge, proceeded to shunt, the proper shunt-signal being lowered for it to go out on to the single line. The 5.30 a.m. up mixed train from Helmsdale was offered to me from Edderton, and I gave permission for it to come. I have booked the receipt of the departure-signal from Edderton at 8.7. It is due to leave Edderton at 8.5 and is due at Tain at 8.20. According to the rule the block should be offered when a train is arriving at a station, and not just when it is ready to depart, so that probably the 8.7 here entered represents the time this train arrived at Edderton, and not the time at which it started. Probably, therefore, it had not actually started when I allowed the down train to go out to shunt. Still if I had thought there was time to complete the shunting operations during the time the up train was running from Edderton, I would, all the same, have allowed them to be performed, and am justified by the rule in doing so. That is the general practice. There is no exception in foggy weather or snowstorms. It was a foggy, misty morning, but there were no fog-signalmen out. We never employ fog-signalmen. We seldom have fogs, and those there are are not generally very thick. That morning I could see the down starting-signal from about the foot-bridge on the platform. I was standing near this bridge when the collision took place. I heard two sharp knocks, and saw a waggon go over the bank at the end of a siding. I thought at first that was all that had happened, and did not know there had been a collision on the main line until I went to the place The first thing I saw was a cattle waggon on its side, and then on going forward I saw the two engines. That of the down train was on the rails, but the

other one had its leading wheels lifted off the rails. Two of the waggons on the up train were broken up. None of the passenger carriages were off the rails, or damaged, that I could see. None of the passengers complained to me of injury. I think one man had his nose scratched. Neither of the drivers or firemen complained of injury. I heard no whistling for the distant-signal. I heard one sharp whistle just before the collision. I went into the cabin and found that the points for the siding were pulled over, and the up signals standing at danger, the shunt-back-signal being off. The up distant-signal repeater was showing danger. I had no conversation with the driver, except that he told me that the crane would be required. I then wired to Inverness. The line was not cleared till 4 p.m. There were two casks of whiskey in the up train which were smashed. I came on duty at 8 a.m. I come on usually at about 7.40, and leave duty after the last train at 10 p.m. I live at the station. The driver of the up train was perfectly fit for duty. The collision took place at 8.16 a.m. My watch was correct that morning. We receive the time from Inverness at 9 a.m. every day. I know Rule 59 but it is a rule not observed on the line, except when "unforseen obstructions" occur. It was not a sudden fog. It was misty when I came on duty, and had been rather misty the night before.

Alexander Ross states: I have been about 20 years in the service and a driver for seven years. On the 28th ultimo I came on duty at Inverness at 4.15 a.m., to run the 5 a.m. down goods train to Helmsdale, due at 12.55 p.m. I then would sleep at Helmsdale, and the next day bring the 5.30 a.m. up train to Inverness due at 10.50 a.m., then go back to Dingwall with the 11.30, and back to Inverness with the 1.10, due at Inverness at 2.5 p.m. On the 27th March I had left duty at about 2 p.m. On the 28th I left Inverness at right time and arrived at Tain at 8.12 a.m., seven minutes behind time. I stopped at the water-column, and then, after taking water, drew forward till the rear van was at the platform. My engine would then be near the signal-cabin. We had a total on of 29 vehicles. We had one waggon to drop. I think it was about the twelfth or thirteenth. I got a proper signal to come forward and out on to the single line with about 12 waggons attached. The shunt-back-signal was lowered and I was on the move back when the engine of the 5.30 a.m. up train ran into my engine. I never saw it at all as I was looking back towards the station. I did not hear it either, or hear any whistle. It was a severe shock, but I cannot give any idea of the speed of the other engine, or whether steam was on or off. My engine was in steam and in back gear. I was a little bruised, being knocked off my feet, and so was my mate. It was very foggy, and had been so all the morning. It was a good deal thicker in the cutting than at the station. I should say I could see an engine for 50 or 60 yards. I could see the home-signal and the starting-signal from the point of collision. I could not see the up distant-signal at all. I heard no whistling for this signal. I have often been stopped at this signal when shunting was going on at the station, and often also at other stations. I had no conversation with the driver of the up train after the collision. I heard a rumour that the up distant-signal had been off, but I did not ask the driver anything about it. I never in my life found a fog-signal on the rails at a danger-signal, in a fog or snowstorm.

Charles Forbes states: I have been over six months in the service, and had been a fireman for one week when the accident happened. I have had 10 years' experience of firing and driving abroad. My driver's evidence is correct, but I myself did hear one sharp whistle, and at the same time saw the other engine just as the collision took place. My driver and I had no time even to speak to each other.

Robert McGregor states: I have been 15 years in the service and a goods guard for about nine months. On the 28th March I came on duty at 4 a.m. to work the 5 a.m. down train to Helmsdale, where we were due at 12.50, and where my duty would end. The next day I left Helmsdale at 11.30 a.m., and left duty at Inverness at 7.10 p.m. I left duty on the 27th at about 7 p.m. On arriving at Tain on the 28th my train consisted of 29 vehicles. The twelfth waggon from the engine had to be dropped in the down sidings, and, after the train had been drawn up to the platform, the brakesman uncoupled behind the twelfth waggon, and the engine, having received the proper signal, drew out on to the single line. The brakesman then uncoupled the twelfth waggon, which had to be knocked back, and the train had just commenced to set back when the collision occurred. The twelfth waggon was empty, the other 11 on the engine were loaded, seven with sheep, one with staves, and the other three with goods. I was standing almost opposite the cabin, when the collision occurred. From where I was standing I could see the up home-signal and the shunt-signal. I could not see the engine of my train owing to the cattle trucks. I could see, I think, five or six of the waggons attached to the engine. The loose waggon was driven back along the siding. One cattle truck full of sheep was upset. This was the seventh from the engine. The eighth, ninth, tenth, and eleventh waggons were driven back along the siding, the coupling behind the upset cattle truck having parted. All those in front of this waggon were on the rails and very little damaged. It struck me at first that what had happened was like a rough shunt. I did not hear any whistle at all.

George Allanach states: I have been two years and two months in the service and about three months a brakesman. On the 28th March I was working as brakesman with guard McGregor, and my hours were the same as his. When the collision took place I had just uncoupled the twelfth of the waggons attached to the engine. I heard one short sharp whistle just before the collision, and I went up the bank. I thought it was my own driver whistling, and I went up to give him a signal. It was very foggy. I did not see or hear the up train coming.

John Matheson states: I have been 17 years in the service, and a driver for three years. I have been in the habit of driving on the main line north of Inverness, and am well acquainted with the signals. On the 28th March I came on duty at Helmsdale at 4.10 a.m. to work till 3 p.m. The previous day I had left duty at Helmsdale at 2 p.m., having had some shunting to do after arrival at 12.50. I left Helmsdale at 5.30 a.m. with a mixed train. We stopped at all stations. We arrived at Edderton at 8 a.m., five minutes before time. We had some shunting to do there, and we left at 8.8 a.m., with a train of ten vehicles, two passenger carriages and a van being at the rear, and the seven waggons being loaded. My engine (No. 64) is an eight-wheeled engine with leading bogie, and driving and trailing wheels coupled. The tender has six wheels. I had an automatic vacuum-brake in good order, working blocks on the coupled engine wheels and the tender wheels. My gauges showed 22 inches of vacuum when we left Edderton. I used the brake on the journey and it acted well. It was foggy all the way from Helmsdale, but more so at some places than at others. We left Edderton three minutes late, and I ran at my usual speed to Tain. I did not see the up distant-signal at Tain until I was about 60 or 80 yards from it. I could not see it further owing to the fog. The arm was standing down at an angle of 45°, showing a proper "all-right" signal. I was then running at about 20 miles an hour. I had shut off steam when about 300 yards outside the distant-

signal, but applied it again after passing the signal, and seeing it was all-right. I kept steam on only for a short time, and then shut it off again. After getting round the corner, approaching the up home-signal at Tain, I saw an engine in front of me shunting about 60 yards off. I was then running at about 15 miles an hour. I at once applied the brake and reversed the engine, and had reduced speed to about 10 miles an hour when I struck the other engine. I gave one whistle just before the collision took place. I was not knocked over or hurt, nor was my mate. I did not see the home-signal until after the collision, and then it was at danger. I had been looking out for it. The fog prevented me from seeing it before I saw the other engine. It was thicker there than at the distant-signal. The leading end of my engine was lifted up off the rails. The driving wheels were up, the bogie having been driven back. The cattle truck and waggons nearest to the engine were off the rails. Some time after the collision I saw the signalman and told him the distant-signal had been off. He said it was not so. I have never seen fog-signalmen out on this line during fogs or snowstorms. Perhaps half an hour after the collision I went back and looked at the distant-signal. The arm was then standing at danger. The collision took place at 8.18 a.m. We are due to arrive at Tain at 8.20. I sounded my whistle, in accordance with the rule, before reaching the distant-signal. I know Rules 288 and 253, and I think I was acting in accordance with them, and was approaching the station cautiously. I quite expected that the down train might be shunting, and that I might be stopped at the distant-signal, and I was particularly careful to look for it. I am often stopped at this signal. I think that I had my train under such control that I could have brought it to a stand at the home-signal. I think that my engine drove the other one back less than an engine length. My eyesight has been tested. I have never had any complaint to make of the signals at Tain.

James Grant states: I have been seven years in the service, and about 4 years a fireman. On the 28th March I was working as fireman with driver Matheson. My driver's evidence is correct, except that, according to my watch, the collision took place at 8.20. At least I found it had stopped at that time, allowing for the three minutes it was slow. I think I saw the engine about the same time as my driver did. I screwed up my hand-brake, which was already slightly on, and I opened the sand-boxes. I have never on any previous occasion found the up distant-signal at Tain off, and the home-signal at danger when shunting was going on.

Angus McDonald states: I have been 17 years in the service, and a goods' guard for 4 years. On the 28th March I came on duty at 5 a.m. to work the 5.30 a.m. train from Helmsdale to Inverness, due at 10.50 a.m. Then to work the 3.15 p.m. down mixed train from Inverness to Helmsdale, due at 8.25 p.m. I had left duty on the previous day at 1 p.m. after eight hours duty. We left Helmsdale at 5.30 a.m. We arrived at Edderton at 8.3 a.m., two minutes before time. We started at 8.8 a.m., three minutes late, with a train made up as follows:—Engine and tender; loaded cattle waggon; four loaded goods waggons; two close vans; one first-class carriage; one third-class carriage, and a goods brake-van. I was riding in the rear van, and my brakesman was with me. It was a dull rainy morning. I should think signals could be seen about 30 yards off. I saw the up distant-signal at Tain. I was pretty close under it. It was drooping. I should say the arm was about six inches down. It was not a clear signal. Our speed at that time was about 15 miles an hour. My brake was hard on, and I left it on and screwed it up hard. I did not try to attract my driver's attention. I could not see him. I was not alarmed. I did not feel much shock from the collision. The speed had been reduced to perhaps about 12 miles an hour. My experience is that drivers always treat the distant-signal as a stop-signal in accordance with the rules. There were 16 passengers in the train. The only person injured was one man who had his face scratched. I was not injured myself. Four of the goods vehicles in my train were off the rails. The cattle waggon, and the one next to it, were badly damaged. I heard no whistle at all. I have never told anyone since the collision that the distant-signal was off. I have not been told by any person that it would be better for me to say it was not off.

George McLeod states: I have been nine years in the service and a brakesman for two years and eight months. On the 28th March, and the day previous I was working with guard Angus McDonald and my hours were the same as his. I saw the up distant-signal when approaching Tain when I was about six or seven waggons' lengths from it. The arm was standing between the danger position and the all-right position, drooping, I should say, about six inches. I would consider it a danger-signal. I have never told anyone that this signal was off. I did not hear any whistling at all.

John Munro states: I am telegraph superintendent on the Highland Railway. On the 28th March I was a passenger in the 9 a.m. down train from Inverness, and I left the train at Tain at about 11.35 a.m. Mr. Roberts was there, and he told me to go and examine the electric repeater of the up distant-signal at Tain. I went first into the north cabin, and saw the condition of the up distant-signal lever, which was back on the frame, and saw that the repeater was indicating danger. I then pulled the lever and saw that the electric repeater was working properly, and came off when the lever was about half over. I then went out to the distant-signal and found that the arm was standing above the horizontal position. I climbed the pole and removed the tin cover of the commutator. I found the connections all right, and clear when the arm was at danger. I then pulled the arm down till contact was made, and it appeared to me at the time that contact was made when the point of the arm was down about six inches. I have since measured the exact droop, and find that when the point of the arm is down $8\frac{1}{4}$ inches the contact is made, and consequently the repeater would show an all-right signal. It is in the same condition now as it was on the day of the accident, and as it has been since it was put up about $3\frac{1}{2}$ years ago.

William Roberts states: I am engineer for opened lines on the Highland Railway. On the 28th March I arrived at Tain at 8.45 a.m., and there heard of the accident. I immediately went to the scene of the accident and set my men to get the road clear as far as possible, and after that I went to the signal-cabin. I found the locking of the levers was correct, so that I could not pull off the home-signal when the siding-point lever was pulled. I then went to the up distant-signal and found that the blade was standing at danger, being rather above the horizontal position. I then walked towards Edderton and I found that the blade of the signal could be distinctly seen for a distance of 240 yards. I returned, and at a distance of 265 yards I could see the blade of the home-signal distinctly. The plan I put in shows the position of the signals and the point of collision correctly. I had not heard any question as to the distant-signal before I went out to look at it. It was a foggy morning. The locking in the cabin has not been interfered with since the accident.

Conclusion.

From the foregoing evidence it appears that the engine and 12 waggons of the 5 a.m. down goods train, which had arrived at Tain at or soon after 8.10 a.m., were allowed to go out on to the single line outside the up home-signal in order to perform shunting operations at about 8.14 a.m., and that between 8.16 a.m. and 8.18 a.m. the 5.30 a.m. up mixed train from Helmsdale, which had left Edderton, the next block station north of Tain, at 8.8 a.m., came into collision with the engine of the goods train which had just commenced to set back into the down siding.

The speed of the mixed train at the time of the collision was about 10 miles an hour, and the exact point of collision was 63 yards north of the home-signal, which at the time was standing at danger.

As to the position of the up distant-signal there is contradictory evidence. It is certain that the lever working this signal was in the danger position, for it cannot be pulled over until the home-signal lever has been pulled, and that lever is locked at danger by the siding lever being pulled over, as it was on this occasion, but the driver and fireman of the up train declare that the distant-signal was off when they passed it. On the other hand the guard and assistant guard of this train say that though the arm was drooping a little they considered it to be a danger-signal, the engineer of the line, when he examined it only about half an hour after the accident, found that it was showing a proper danger-signal, and the signalman and station-master state that the electric repeater in the cabin showed that the arm was at danger.

The repeater was tested for a second time in my presence, and it was found that as soon as the arm drooped $8\frac{1}{4}$ inches at the point the repeater in the cabin showed an "all-right" signal, and such an amount of droop as this is so little that no driver would be justified in taking an arm so drooping for anything but a danger signal.

I consider, therefore, that the driver of the up mixed train, who had at the time been on duty for a little over four hours, is immediately responsible for the collision, inasmuch as he passed the distant-signal at danger (in contravention of Rule No. 40), and, having made this mistake, the collision was almost inevitable, for it was so foggy that signals could not be seen for above 60 or 80 yards, and the driver actually saw the engine on the line about 60 yards in front of him before he saw the up home-signal. He was then running at about 15 miles an hour, which, under the circumstances, was too fast, having regard to Rules 27 and 253, and with the small amount of brake-power at his command he could do no more than reduce the speed of his train to about 10 miles an hour.

What, however, is in my opinion far more to be deprecated than the conduct of the driver is the manner in which block-working is carried out upon the Highland Railway.

It has more than once been pointed out in the case of previous accidents, that it is entirely opposed to the practice on other lines to allow shunting operations to be continued on the single line, outside a loop, when a train has been allowed to approach from the next block station, and, as I remarked in the case of the collision at Helmsdale in April 1891, it appears to me that it is a distinct breach of the undertaking, given by the Company when the line was opened, to allow such a thing to be done.

This undertaking, dated 31st May 1864, specifies that "one engine only or two "coupled together will be allowed to be in steam between Invergordon and Parkhill, "Parkhill and Tain, and Tain and Meikle Ferry at one and the same time," and the contention of the Company that their station at Tain (and elsewhere) extends from the down distant-signal to the up distant-signal, a distance of nearly a mile, and that within these limits they are relieved from the restrictions of block-working, is one unsupported by custom, and one most dangerous to admit.

Under the provisions of the Regulation of Railways Act, 1889, all passenger lines must be worked upon the block system, whereas in former years all that the Board of Trade was empowered to do was to require, at the time of inspection of a new line, that the proper instruments for block-working had been provided. There is no legal definition of what block-working actually means, but it is perfectly well understood by railway men to mean the preservation of an adequate interval of space between trains, and I have no hesitation in recommending that the Highland Railway Company should be informed that working under rules which admit of a train shunting on a single line, under the protection of one signal only, and that a distant-signal, when another train is actually approaching from the opposite direction, cannot be considered as block-working within the meaning of the Act.

Three other points in connection with this collision call for remark :—

1st. It is quite apparent that if there had been a fog-signalman at the distant-signal, the attention of the driver would have been called to the position of the signal in the usual manner, by the explosion of a detonator, although, as the signal-arm was perfectly visible for some appreciable distance, I do not think the absence of a fog-signalman can be held to excuse the driver for running past the danger-signal, and indeed I am not at all certain that the condition of the weather was such that upon any line, except perhaps a very crowded line, fog-signalmen would have been out. It appears, however, from the evidence that fog-signalmen are never employed upon this railway, which is a serious matter.

It is stated that there are never fogs of any consequence, and probably this is so, but it is an undoubted fact that there are frequent snowstorms, and yet that portion of Rule 59 which enjoins that detonating-signals are to be used in foggy weather and snowstorms is admittedly a dead letter, and allowed to be so, than which nothing can be more objectionable, for if the provisions of a rule are necessary they should be adhered to, and if unnecessary they should be struck out.

2nd. It is no doubt a fact that the force of the collision was taken up in a great measure by the goods vehicles at the front of the train, and the shock to passengers lessened thereby, but on the other hand it is clear that the speed of the train would have been, at any rate, checked to a far greater extent than it was if the passenger carriages had been next to the engine, so that the driver would have had at his command the continuous-brakes on the two passenger vehicles; while, assuming that the guard would have done his duty when he saw the distant-signal (an absolute stop-signal on the Highland Railway) at danger, the continuous-brakes on the engine, tender, and two passenger vehicles, would have been applied by him and the train brought to a stand before reaching the point of collision at all.

3rd. In the case of three of the servants of the Company the hours of work, disclosed by the evidence, are too long and should be reduced. In alternate weeks the signalman at Tain is on duty for 15 hours per diem, less two hours in two periods allowed for meals; and such hours of duty are certainly excessive. The tour of duty of the guard and brakesman of the up mixed train extends on alternate days from 5 a.m. to 8.25 p.m., or for 15½ hours, and, although there is an interval between trains at Inverness, amounting to 4 hrs. 25 mins. if the train arrives punctually, the hours of work, after making allowance for this rest, are still too long.

I have, &c.,

F. A. Marindin,
Major. R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Rolling-Stock.

5.30 a.m. Up Train ex Helmsdale.

No. 64 engine.—Inside and outside frames broken in front of cylinders; slide-bar brackets broken; link-motion twisted; bogie centres broken; three bogie-springs broken; buffers and beams smashed; brake-gear damaged.

No. 64 tender.—Slightly damaged.

Highland Railway cattle truck No. 112.—One transom, three buffer-spindles, two horn-plates, one axle-box, two spring-shoes, two end-standards and cleading, all broken.

Highland Railway waggon No. 1,442.—Both side-beams broken; will require rebuilding.

Highland Railway covered goods van No. 1,755.—One buffer-spindle broken; one buffer-spindle bent.

Highland Railway covered goods van No. 1,126.—Two buffer-spindles bent; one end smashed in and other damage.

5 a.m. Down Train ex Inverness.

No. 74 engine.—Outside frames bent; buffers and and beam smashed; bogie-centre pin broken, and other small damage.

No. 74 tender. Buffer and draw-hook broken; handrail torn off and other slight damage.

Highland Railway cattle truck No. 1,825.—Two buffer-spindles bent; spring-chair broken, and other slight damage.

Highland Railway cattle truck No. 1,841.—Two springs broken; two axle-boxes broken; two buffer-spindles bent.

Highland Railway cattle truck No. 1,109.—One bearing-spring broken.

Printed copies of the above Report were sent to the Company on the 25th May.

LANCASHIRE AND YORKSHIRE RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
24th March 1894.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 26th ultimo, the result of my enquiry into the causes of the collision which occurred on the 22nd ultimo at Thorpes Bridge junction, between Miles Platting and Newton Heath stations, on the Lancashire and Yorkshire Railway.

In this case, during a dense fog, while the 8.20 a.m. passenger train from Manchester for Middleton was standing at Thorpes Bridge junction down home-signals, it was run into at the rear by the 8.35 a.m. passenger train from Manchester for Oldham.

No complaints of injury have been received from passengers, but five permanent-way men travelling as passengers in the brake-van at the rear of the Middleton train were slightly injured, and the guard of that train was badly shaken; the guard of the Oldham train was slightly injured.

The Middleton train consisted of a tank-engine, running chimney in front, and six vehicles, including a brake-van at the tail of the train; it was fitted throughout with the automatic vacuum-brake, and in it the rear three vehicles were damaged and the vacuum-pipe broken.

The Oldham train consisted of a tank-engine, running chimney in front, and seven vehicles, the first and last having brake-compartments, with a guard in the rear one; the train was fitted throughout with the automatic vacuum-brake, and in it the engine had its smoke-box door stove in and the vacuum-pipe broken. One pair of wheels of the vehicle next in front of the van, and the rear wheels of the van of the Middleton train, were knocked off the rails.

Description.

The signal-cabin next on the Manchester side of Thorpes Bridge junction is at Brewery sidings, the distance between it and the junction down home signals being 760 yards; the junction down distant signals are beneath the Brewery sidings down starting-signal, and are 420 yards from the down home-signals; the Brewery sidings down home-signal is 340 yards from the down starting-signal, the Brewery sidings cabin being between these two signals, 240 yards from the starting-signal and 100 yards from the home-signal. The starting-signal is separated from the down main line by a goods line. The line rises slightly towards the junction.

Absolute block working is in force on this part of the line, and in consequence of the dense fog, fog-signalmen were stationed at Thorpes Bridge junction down home-signals, and at Brewery sidings down starting and down home signals, the man stationed at the down starting-signal attending also to the junction down distant-signals.

Evidence.

1. *William Wood*, platelayer.—I joined the service on February 14th, having been previously a farm labourer. On February 22nd I came on duty at 6 a.m. to leave at 5.30 p.m. At 6 a.m. I was appointed to act as fog-signalman at the down starting-signal of Brewery sidings cabin, the down distant-signals below it being those for Thorpes Bridge junction. This was the first time I had been employed as fog-signalman, and my ganger instructed me what to do. I received a lamp, two flags, and some fog-signals, and he told me to place two fog-signals on the rail about 60 yards from the signal-post, and to stand between them and the signal-post where I could see the signals; if the starting-signal and one of the distant-signals were off at the same time, I was to lift the fog-signals; if the starting-signal was off and the distant-signals were on, I was to leave the fog-signals on the line, give the driver a green signal, and tell him to move on cautiously; if none of the signals were off the fog-signals were to be left on the rails and a red signal to be shown by me. The fog was very thick at 6 a.m., and varied a good deal between that and the time of the collision. I could not see the signals for more than about 20 yards. The starting-signal had been worked all the time I was on duty, and after it had been taken off for a train to pass it had always been put to danger again. When the Middleton train passed me the starting-signal was off for it, but the junction distant-signals were at danger, and I left my fog-signals on the rails, but gave the driver a green flag, and the train passed on. After the train had passed I put down two fresh fog-signals and in about ten minutes the Oldham train came along, none of the signals being off, the starting-signal having been put to danger very soon after the Middleton train had passed. The engine of the Oldham train exploded the fog-signals and I showed the driver a red flag from where I was standing

outside the goods line. I did not shout, but I believe he must have seen the flag. He passed me at a fairish speed with steam on, but I thought he would have stopped at the signal. After the train had gone on without stopping I thought there would be a collision, and soon after heard the noise. In a few minutes the fireman of the Oldham train came back and asked me if the signals had been "on" or "off." I said they had been "on" as they are now, and that I had given them a red flag, which was still in my hand. He said that there had been a collision, and that they had killed the guard of the Middleton train. I then went and informed the signalman of what had occurred. I put down fog-signals on the rails after the Oldham train had passed. The fog had been thicker earlier in the morning than when the collision occurred.

2. *Jeremiah Rothwell*, driver; 26½ years' service, driver 18 years.—I signed on at 4.20 a.m. on February 22nd to sign off at 4 p.m., between which hours there were two periods of an hour each not occupied. These hours occur twice a week, and on other days I sign on at 4 a.m., and off at 2.20 p.m. I was driver of the 8.20 a.m. passenger train, Manchester for Middleton. My engine was a tank-engine running chimney first, and the train consisted of six vehicles, including a brake-van at the tail. The automatic vacuum-brake was fitted throughout. The fog was very thick all the way from Manchester. I stopped at Miles Platting. At Brewery sidings I was pulled up by fog-signals at the home-signal, which was lowered as I was stopping. The next signal I had to pass was the Brewery sidings starting-signal, which was off, and I passed over no fog-signals. I could just see the starting-signal as I passed it, and noticed that both distant-signals were at danger, and I judged therefore I should have to stop at the junction. I saw a green flag waved as I passed the fog-signalman, who was standing close to the signal-post. On approaching Thorpes Bridge junction I ran over fog-signals, and the fog-signalman told me my signal was at danger. At this time the fog was so thick that I could not see more than two carriage lengths (24 yards). I had been standing at the junction from 8.38 a.m. to 8.48 a.m., when the collision occurred without my having heard the coming train. I had my hand on the regulator, to start, the fogman having just shouted out that the home-signal had been taken off. My train was not much moved, but I was thrown across the foot-plate. I was not hurt, nor was the fireman. The vacuum-pipe was broken, and the brake was applied. I do not know whether anyone was back protecting my train. The fogman told me he was going back to do so, but I heard no fog-signals explode. The body of the van was knocked forward on the frame, and the guard, who was inside, was badly hurt. One pair of wheels of the first-class carriage in front of the van was knocked off the rails. The thickness of the fog was about the same at the junction as at Brewery sidings.

3. *James J. Fogg*, fireman; five years' service, five months fireman.—My hours are the same as my driver's, and I agree with his statement, except that I remember passing over fog-signals at Brewery sidings starting-signal. I think the fog was denser at Brewery sidings than at the junction.

4. *William Duffet*, signalman; 13 years' service, eight years signalman.—I have been stationed more than two years at the Brewery sidings cabin, where I came on duty at 6 a.m. on February 22nd for eight hours. I have a train booker, who keeps the register. The fog was very thick when I came on duty, and remained so without much change up to the time of the collision. I had fog-signalmen at my down home, down distant, and down starting signals, and also at the up signals. The down home-signal was off for the Middleton train three minutes before it passed at 8.38 a.m., but I heard the train explode fog signals which ought to have been taken up. The starting-signal was also off for this train. I did not get "Line clear" for this train in the ordinary course. At 8.40 a.m. I received "Be ready" for the Oldham train. I accepted the signal; the train was given in at 8.42 a.m., and it was stopped at the home-signal for two or three minutes, having arrived there at 8.46 a.m. I then lowered my home-signal to allow it to pass on to the starting signal, which was at danger, and showed a green light as the driver passed, calling out to him that the block was on. There is a goods line between the cabin and the down line. I am sure from his action that the driver saw and heard me. I did not know whether he had stopped at the starting-signal, though I had expected him to do so, and I knew nothing more about the train until fog-signalman Wood came and told me at about 8.55 a.m. that the driver had run past the signal and that there had been a collision. Directly after this I got a telephone message from Thorpes Bridge junction that there had been a collision, and I blocked the line. My object in moving the Oldham train from the home to the starting-signal was to enable, if necessary, any shunting to go on in connection with the sidings. Rules 41A, 48A, 154A, and 275A, and 28 in the block regulations apply to the use of starting or advance signals in the case of fog, and I hold that 154A justified me in sending the Oldham train on to it. I had been using the starting-signal all the morning, but had sent no other train to stand at it than the Oldham train. I had used the signal in the ordinary way. There had been fog-signalmen out during the night. I could not see more than 20 yards along the line.

5. *Thomas Robinson*, driver; 28 years' service, 17 years driver.—I signed "on" on the 22nd February at 3.45 a.m. to sign "off" about 11.45 a.m. I joined the Oldham train due to leave Victoria at 8.35 a.m. My engine was No. 188, a tank-engine, having six coupled wheels with radial axle-boxes on the trailing wheels; it was running chimney first. The train consisted of seven vehicles, the first and last having brake-compartments, with one guard in the rear one. The automatic vacuum-brake applied throughout the train, the working pressure being 20 inches. We stopped at Miles Platting, and were then nearly stopped at the Brewery sidings home-signal, where I had run over fog-signals. I was able to see the home-signal, the fog not being so thick there as further on. I next expected to be stopped at the Brewery sidings starting-signal. On approaching it I ran over two fog-signals and got a green flag from the fog-signalman, which meant that the starting-signal was off, but the distant-signals at danger, and I accordingly went on, prepared to stop at Thorpes Bridge junction. I was approaching the junction at a speed of 15 miles an hour, when two or three yards off I caught sight of the van of the Middleton train. My steam was on at the time, I had just time to shut it off and apply the brake before the collision, the speed being very little reduced. We went forward a very short distance entangled in the van. No wheels in my train were, I believe, off the rails. I was not hurt, nor was the fireman. I ran over no fog-signals nor saw anything of a fog-signalman before striking the van. As I passed the Brewery sidings' cabin I saw the signalman with a green flag, but did not hear him say anything. I did not see the Brewery starting-signal, but was guided by the fog-signalman's green flag. I did not think I was so close to Thorpes Bridge junction, as it turned out I was, when the collision occurred.

6. *Thomas Beeley*, fireman; six years' service, nine months fireman.—I have been all the time with Robinson, and I was with him on February 22nd, when my hours were the same as his. I do not agree with Robinson's evidence as to not stopping at Brewery home-signals, where we were stopped, I

think, for three minutes, and then on passing the cabin I heard the signalman say something which I took to mean we were to draw up to the starting-signal. On approaching it I could not see it, but the driver said that the fog-signalman had called him on. The speed just before collision was 11 to 12 miles an hour. After the collision I told the driver I would go back to Brewery sidings starting-signal. I did so, and saw the fog-signalman there. I asked him whether the starting-signal had been off or on, and he said "on," but I do not remember his saying anything about the flag. He had only a red flag in his hand; the green one was on the ground.

7. *James Walsh*, guard; 11 years' service, three years guard.—I commenced work on February 22nd at 5.15 a.m. to remain till 2.45 p.m. I was guard of the 8.35 a.m. passenger train from Manchester for Oldham. We started from one to two minutes late, the train consisting of seven vehicles. I was in the rear one, a brake-carriage, from which I could apply the automatic-brake. We stopped at Miles Platting and then at Brewery sidings home-signal for three minutes, and left it at 8.46 a.m. I did not see the home-signal, but I supposed the driver was called on by the fog-signalman. I did not hear or see the signalman as I passed the cabin. When we started from the home-signal I thought we were going clear away. I heard no fog-signals explode as we approached the starting-signal, but they may have done so without my hearing them. I saw nothing of the fog-signalman. We stopped a minute at or near the starting-signal and then we went on, and the next thing was the collision when the speed was 10 or 12 miles an hour. It took me quite unawares, and I was knocked against the partition of the van and injured in the face and neck, but I had not to leave work. The collision occurred at 8.48 p.m. The fog was so thick that I could not see more than a carriage length. I could not see the Brewery sidings starting-signal, the fog being too thick. I had gone back about 100 yards to protect my train (where I placed two fog-signals) when I heard that the train was protected at the Brewery sidings cabin.

8. *William Moss*, platelayer.—I have been in the service about 15 years, and have acted as fogman at Thorpes Bridge junction down home-signals during the last seven years. I was called out to act as fog-signalman at about 12 midnight on February 22nd. The Middleton train came to a stand about 15 or 16 yards in rear of the home-signal, having been stopped by exploding the detonators I had placed upon the rail. I spoke to the fireman, as I was on his side, and drew the train up as near as I could to the home-signal. I took two detonators to get behind the train to protect it. I had just got in rear of the brake-van when I heard the Oldham train coming. I ran on as far as I could, but when I saw the train it was so close upon me that I had not time to get the fog-signals put down. The fog was very dense, and I could not see above 10 yards. There was a good red tail-light and two red side-lights at the rear of the Middleton train.

Conclusion.

The immediate cause of this collision was the failure of Thomas Robinson, the driver of the Oldham train, to attend to the danger hand-signal shown him by the fog-signal-manon duty at the Brewery sidings starting-signal. In consequence of the very dense fog which prevailed at the time, the starting-signal itself and the distant-signals of Thorpes Bridge junction, underneath that starting-signal, could not be seen from the line. There is no reason to doubt the fact of these signals being at danger, nor that the fog-signalman on duty acted in accordance with his instructions in placing on the rails two fog-signals about 60 yards from the signal-post, and in showing (from his place about midway between the fog-signals and the signal-post) a red flag to the driver of the Oldham train, thus indicating that both starting and distant signals were at danger. Robinson states that he had not been actually stopped at the Brewery sidings home-signal (the fireman and guard of the train and the signalman on duty in the cabin all agreeing that the train had been stopped at this home-signal from two to three minutes), but went forward past the cabin, seeing the signalman show him a green flag, but not hearing him shout, expecting to be stopped at the starting-signal; that on approaching this signal he ran over two fog-signals and then got a green flag from the fog-signalman; that on receiving this green flag he concluded that the starting-signal was off and the junction distant-signals were at danger, and that he was at liberty to proceed as far as the junction; that he accordingly did so, and was approaching the junction (to which he was closer than he had supposed) at a speed of about 15 miles an hour, with steam on, when at a very short distance ahead he caught sight of the van of the Middleton train, having just time to shut off steam and apply the vacuum-brake before his engine struck it, and drove it forward a short distance. Had Robinson really seen a *green* flag exhibited at the Brewery sidings starting-signal, he would not be so much to blame as he is, but from the fact of his fireman going back immediately after the collision to ask the fog-signalman whether the starting-signal had been "off" or "on" when the train passed it, and from the straightforward way in which fog-signalman Wood gave his evidence, I fear that Robinson either did not see Wood's signal at all, or, if he did see it, neglected to attend to it. Robinson is further to be blamed for approaching the junction in a dense fog at so injudiciously high a speed that he would almost certainly have overrun the junction home-signals had the collision not occurred.

Robinson is an experienced driver of 17 years' service in that capacity. He had come on duty at 3.45 a.m. on the 22nd February for a spell of eight hours, and had therefore been on duty about five hours when the collision occurred.

Beeley, Robinson's fireman, heard the signalman say something which he took to mean that they were to draw up to the starting-signal, as they passed the Brewery sidings cabin. He did not see this signal or the fog-signalman, but says that Robinson told him that the latter had called him on. He estimates the speed just before the collision at 11 to 12 miles an hour.

Beeley's hours of duty were the same as Robinson's.

Walsh, the guard of the train, heard no fog-signals explode at the Brewery sidings starting-signal, saw nothing either of the signal or of the fog-signalman, and was taken unawares by the collision, when the speed was from 10 to 12 miles an hour.

Walsh had come on duty at 5.15 p.m., for a spell of $9\frac{1}{2}$ hours, and had therefore been on duty $3\frac{1}{2}$ hours when the collision occurred.

The Middleton train had been standing at the junction home-signals about 10 minutes, viz., from 8.38 to 8.48 a.m., when, without any warning, and just as the driver was about to start the train (having been informed by fog-signalman Moss, on duty at the junction, that his signal was lowered), the collision took place. The driver stated that he had heard no fog-signal exploded before the collision, though Moss had told him he was going back to protect his train.

The guard of the Middleton train was in his van at the rear of the train when the collision occurred. He was not sufficiently well to be examined when I held the enquiry.

Fog-signalman Moss lost unnecessary time in going back to protect the Middleton train, as, though it had been standing 10 minutes at the junction, he had got back only as far as the rear of it when he heard the Oldham train approaching, and had no time to put down any fog-signals before the collision. He must therefore be blamed for his dilatoriness, but for which he might have got back and have put down fog-signals at a sufficient distance to warn the driver of the Oldham train, time enough for him to avoid or greatly minimise the effects of the collision.

Moss had come on duty at midnight, and had therefore been engaged about $8\frac{3}{4}$ hours when the collision occurred.

Signalman Duffet, on duty in Brewery sidings cabin, states that the Middleton train passed at 8.38 a.m., and that he stopped the Oldham train at the home-signal at 8.46 a.m., when he allowed it to proceed to the starting-signal, showing the driver a green light and shouting to him that the block was on as he passed the cabin; that he supposed the train had stopped at the starting-signal until he was informed by fog-signalman Wood at 8.55 a.m. that the train had run past the starting-signal and that there had been a collision.

Duffet says that he had allowed the Oldham train to proceed from the home to the starting-signal in case of any shunting having to go on in connection with the sidings, this not being practicable with the train standing at the home-signal. He thought that the following portion of Rule 154A, that after a train has been brought to a stand at a home-signal, this may be lowered, and "in foggy weather or falling snow the engine-driver must, when practicable, be verbally informed that he is only to draw forward towards the starting-signal"; justified him in acting as he did; the driver of the train being enjoined to go no further than necessary to leave the last vehicle well clear of the points and crossings and within sight of the signalman.

Part of No. 28 of the Block Telegraph General Regulations is to the same effect, viz., that "in foggy weather and snowstorms, passenger trains must not be drawn forward past the starting-signal (in this case the home-signal) towards the advanced starting-signal except for station duties and shunting purposes," the driver as before going no further than necessary. Rule 48A also applies to the present case; it states that in foggy weather or during falling snow a train must not be drawn past a signal-box towards the starting-signal for the purpose of waiting "Line clear" further than necessary to get it under cover of the home-signal, when the starting-signal is at such a distance from the box that the train when standing at it would be out of sight of the signalman.

Now, as there was no shunting waiting to be performed while the Oldham train was standing at the Brewery sidings home-signal, there was no actual need to bring the train forward till "Line clear" had been received from Thorpes Bridge junction; but if, for the sake of getting the train under the protection of the home-signal, Duffet, as allowed by Rule 48A, drew it forward sufficiently to do this, he made a mistake, in my opinion, in showing the driver a green light, and in not stopping him opposite the cabin with a red light and telling him why he had called him on.

Duffet has been a signalman eight years, has been stationed two years at Brewery sidings cabin, where he had come on duty on the 22nd ultimo at 6 a.m. for eight hours, and had therefore been engaged about $2\frac{3}{4}$ hours when the collision occurred.

Platelayer Wood, acting as fog-signalman at Brewery sidings down starting-signal —the first time he had performed this duty—appears to have acted properly as regards the signalling of the Middleton and Oldham trains. He had been on duty about $2\frac{3}{4}$ hours at the time of the collision.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

C. S. Hutchinson,
Major-General, R.E.

Printed copies of the above Report were sent to the Company on the 11th April.

LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
March 12th, 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 26th ultimo, the result of my enquiry into the collision that occurred on the 22nd idem at Wallsall station on the London and North-Western Railway.

On this occasion, while the 9.30 a.m. train from Wolverhampton to Walsall was standing on the down slow line at the home-signals of Bridgeman Place signal-cabin, outside Walsall station, it was run into in rear by the 9.25 a.m. train from Birmingham, which had been allowed to enter the section while it was still occupied by the former train.

Twelve passengers are reported to have complained to the Company of shock and minor injuries, and guard Parsons of the Birmingham train was severely bruised on the hip, neck, and shoulder.

The Wolverhampton train consisted of a four wheels coupled tank-engine, running bunker first, and six close coupled vehicles, having a brake compartment at each end. The engine and train were fitted throughout with the automatic vacuum-brake. The engine had one buffer-casting broken, and all the coaches composing the train were more or less damaged. (For details, *see* Appendix.) The front and rear brake-vehicles had each their leading wheels off the rails, and the last vehicle but one had its two rear wheels off the rails.

The Birmingham train consisted of six wheels coupled tank-engine, running bunker first, and six close coupled vehicles, similar to those of the other train, and it was properly fitted with the automatic vacuum-brake. The engine had the lamp-sockets and buffer-plank broken, and no damage was done to the train.

The permanent-way received no injury beyond the breaking of one chair.

Description.

This collision occurred on the down slow line abou 300 yards outside Walsall station. The Wolverhampton train was standing at the down home (slow line) signals, which are situated 241 yards from the end of the platforms, and 164 yards from Walsall No. 2 (Bridgeman Place) signal-cabin, from which they are worked. There is another signal-cabin, Walsall No. 1 (also known as Bodley's), 566 yards outside Walsall No. 2 cabin, and there are four running-lines, viz., up and down slow and up and down fast, between the two cabins, besides a siding line on either side of the four main lines. The traffic is worked on the absolute block system between the two signal-cabins.

There was a dense fog at the time of the mishap, and it was not possible for the signalman at Bridgeman Place cabin to see his down home-signals or any train that might be standing at them.

From Bridgeman Place eastwards, through the station as far as the Park Street cabin, the lines are worked on the permissive block system, this arrangement having been sanctioned by the Board of Trade.

Bridgeman Place cabin is a very busy one, there being in it 47 levers in use, besides block instruments for the up and down slow and up and down fast lines to and from Bodleys, six tell-tale instruments for the lines through the station, six electric route

indicators, four electric starting indicators, a telephone, and a speaking telegraph instrument.

Evidence.

Henry Wood, engine-driver, states: I have been in the Company's service 24 years; and I have been driver 12 years. On the 22nd February I came on duty at 7.40 a.m. I came off duty at 7.25 p.m. on the 21st February, and my proper day's work on the 22nd was 9 hours and 55 minutes, but I was detained on account of the joint enquiry. On the morning of the 22nd I worked the 9.30 a.m. passenger-train from Wolverhampton to Walsall. I left Wolverhampton at 9.35, being five minutes late. I was due at Walsall at 9.47, and I arrived at the Bridgeman-place home-signal at 9.58. I had been delayed by signals on the way. On reaching Bodley's signal-box I was brought to a stand, the home-signal being against me. I was there a minute or two, and then, the signal being lowered, I drew cautiously down to Bridgeman Place. The distant-signal for Bridgeman Place is on the same post as the home-signal at Bodleys, and the distant-signal remained at danger. On reaching Bridgeman Place the home-signal was at danger, and I came to a stand at it. As soon as I came to a stand I blew my whistle, and after a minute or so I blew it again, and I sent my fireman up to the Bridgeman Place signal-box. I then again blew the whistle. I had been standing about three minutes when my train was run into in rear. My engine was driven forward about six yards. The brakes on my train were slightly on. I had 15 inches of vacuum in the train-pipe. No injury was done to myself, but the left-hand engine-buffer casting was broken by the collision. My engine was No. 2248 four wheels coupled tank-engine, and I was running bunker first. My mate heard the noise of the collision on his way to the signal-box, and he returned to his engine at once without going to the signal-cabin. I had been standing at the home-signal not more than two minutes when I sent my fireman to the cabin. I had no conversation with anyone as to the collision after it occurred. There was a thick fog that morning, and I could not see the signals until I was within a yard or two of them. The fogmen were out.

Benjamin Reynolds, fireman, states: I have been in the Company's service since 1882, and I have been fireman since 1883; and I had been firing for driver Wood for a fortnight at the time of the collision. On the 22nd and 21st February my hours of duty were the same as my driver's. I corroborate my driver's evidence. After the collision I went to the signal-cabin and told the signalman that the down train from Birmingham had run into us, and that the down slow line was blocked. The signalman was then talking to inspector Bacon. I heard the signalman say to the inspector that he had not accepted the Birmingham train. There was a thick fog that morning, and we could only see the signals when we were close up to them. The fogmen were out.

John Taylor, ticket examiner, states: I have been in the Company's service 30 years, and I have occasionally acted as guard during the last five years. I am passed as a guard. On the 22nd February I came on duty at 6.30 at Wolverhampton, and I worked the 7.50 a.m. train ex Wolverhampton to Walsall and the 8.25 a.m. train Walsall to Wolverhampton. I then worked the 9.30 from Wolverhampton to Walsall. We left at 9.36. We waited for the regular guard of the train to arrive from Bescot, but as he did not arrive in time I took up his duties. I came off duty at 6 p.m. on the 21st, and I came off duty at the same time on the 22nd. The 9.30 train consisted of six close coupled vehicles, with a brake compartment at each end. I was the only guard with the train and rode in the rear brake compartment. The marshalling of the train was as follows, starting from the rear: One composite with brake compartment, one first-class, one composite, and two thirds and one third brake van. We lost time on the journey, being checked by signals. We stood at the home-signal at Bodley's for rather more than a minute, and then drew slowly down to Bridgeman Place, when we were again pulled up at the home-signal. The driver whistled as soon as he came to a stand. I waited for a minute and then went to the door to get out of my van to see if the signalman had been informed that we were standing there. But before I could get out of my van I saw the engine of the Birmingham train approaching us. It was then about 15 yards off. I thought I should not have time to alight, so I threw myself on the bottom of the van, and immediately afterwards the engine ran into my train. I was bruised on the elbow. Directly after the collision I jumped out and asked the driver of the Birmingham train how he came to be so close on to us. He replied that the signals were off at Bodley's crossing. I had no conversation with my driver at the time of the collision. The end of my van was much damaged, and one buffer-rod was broken, and I noticed one other buffer-rod twisted. The two last vehicles were off the rails, that is to say, one pair of wheels of each of these vehicles was off the rails. The brakes were on at the time of the collision. The gauge showed between 15 and 18 inches of vacuum. I should say we had been standing about two minutes when I went to the door to get out of my van. There was a thick white fog. I could not see the home-signal at Bridgeman crossing from my van. While standing at the home-signals I attended to some milk cans and parcels which had to be put out at Walsall. I looked at my tail and side lights at Pleck station, and they were all burning at that time. The tail light was smashed by the collision, and I cannot say whether the side lights were burning or not after the collision. I feel sure they were all alight before the collision. I heard the driver whistle twice.

John Fox, driver, states: I have been in the Company's service since March 1872, and I have been driver since October 1882. On the 22nd February I came on duty at 2.45 a.m. at Bescot. I came off duty on the 21st at 1.20 p.m. I was due to book off at about 1.20 on the 22nd, but as a matter of fact I did not book off till 1.50 p.m. My engine was 1101, an eight wheeled tank-engine, having six wheels coupled. I was running bunker first. The engine was fitted with the automatic vacuum brake apparatus working blocks on all six coupled engine wheels, and throughout the train. The brake connection between the engine and train was properly made. We tested the brake at starting. It was in good working order. I was working the 9.25 from Birmingham to Walsall. We left at 9.29. At Pleck junction I had been brought to a stand, and after standing about a minute the home-signal came off for me, and the distant for Bodley's dropped at the same time, and on reaching Bodley's the home-signal was off for me, and the distant arm for Bridgeman Place was on. I approached Bodley's at about 9 or 10 miles an hour, but as soon as my mate saw the distant arm against us I slackened speed. I did not see the train in front of me till I was less than a coach length from it. I was then travelling about four miles an hour. I was preparing to stop at the home-signal. The brakes were not on when I first saw the train in front. Steam was not on. I had shut off steam the other side of Bodley's home-signal. I immediately applied

the brake on seeing the train, but there was not sufficient time for the blocks to come into action, and my engine struck the train at about four miles an hour. I was bruised on the side and thigh. My mate was not hurt. My engine had both buffer-castings broken on the bunker end. There was a thick black fog and I could not see a coach length in front. I cannot say whether the tail lights of the train in front were alight or not. The fogmen were out, and the fogman at Bodley's called to me as I passed that one signal was off. My mate said he saw the home-signal was off, and the distant for Bridgman Place was on.

Frederick Tomlinson, fireman, states:—I have been in the Company's service since 11th December 1881, and have been fireman since 1888, and I had been firing for driver Fox for about a week at the time of the collision. On the 21st and 22nd February my hours of duty were the same as my driver's. We were working the 9.25 a.m. train from Birmingham. On reaching Pleck junction we were stopped by signal for about a minute. The signals were not on my side, and I could not see them. The driver was watching for the signals to come off, and as the top arm fell he said, "now the other one," and immediately afterwards he said, "that's it," from which I understood that both signals had come off. On reaching Bodleys the home-signal was off and the distant arm below it was at danger. I saw those signals myself, they were on my side. I said, "the back signal is on." He had, I believe, shut off steam before that. We were travelling at about 14 miles an hour on approaching Bodleys. As soon as I told him the back signal was on he applied the automatic-brake and slackened speed considerably. I did not see the train in front till we were about five yards from it. I did not see any tail or side lights, but caught sight of the top of the coaches. We were then travelling at about four or five miles an hour. I shouted to my driver whoa! and he at once applied the brake, but before the brake had time to act, we struck the coaches. There was a thick yellow fog. The fogmen were out at Pleck junction and at Bodley's. I heard the fogman at Bodley's shout that "there is one off," and I saw the home-signal off, and the distant arm below it on at the same time. There were no detonators on the rail, nor was the fogman exhibiting the red flag.

George Parsons, guard, states:—I have been in the Company's service about 38 years, and I have been guard 27 years. On the 22nd February I came on duty at 7.5 a.m. to work till 6.22 p.m. I came off duty on the 21st at 4.20 p.m. I was guard of the 9.25 a.m. train from Birmingham to Walsall. We left about four minutes late. My train consisted of six close coupled six-wheeled vehicles, having a brake compartment at each end. I was riding in the rear brake compartment. The train was fitted throughout with the automatic vacuum-brake working blocks on four wheels on each coach. The brake was in good order. It was tested before starting. On reaching Pleck junction we were pulled up at the home signal for about a minute, and when we went forward again I saw that both the home and distant signal were lowered for us. I saw the signals myself. We passed Bodleys at about eight to ten miles an hour, but I did not look for the signals at that place. I was making out the driver's ticket thinking we were having a clear run into Walsall. There was no check in the speed on passing Bodley's. The driver did not shut off steam till just before we came into collision. I did not hear any fogman call out to the driver at Bodley's. After passing Bodley's I felt the brake applied full force, and immediately afterwards the collision occurred. We were still going at about eight to ten miles an hour when the brake was applied. I was thrown from one end of my van to the other by the shock, and damaged my hip, side, and neck, and have been on the sick list ever since. I cannot say whether any damage was done to my train or not. Seeing the signals at Pleck junction off, I thought we were running with a clear road into Walsall. Had the driver whistled for the brake I should have at once applied it. There was a dense fog at the time. I could not see more than a coach length.

Benjamin Burgess, signalman, states: I have been in the Company's service about 23 years, and signalman all the time. I have been stationed at Bodley's signal-box about 12 years. It is an eight-hour box, and on the 22nd February I came on duty at 6 a.m. to work till 2 p.m. On the 22nd February I remember the Wolverhampton train passing my cabin about 10 minutes late. I got the "Be ready" for it at 9.51, and I accepted it at the same time. It was on line at 9.51, and passed at 9.57. Signalman Hobbs offered it to the box in advance (*i.e.*, Bridgeman Place) at 9.51, giving the shunt-signal (1, pause, 5, pause, 5), not having got clear for the train in advance. He gave this signal twice at short intervals, and it was, I believe, acknowledged when he gave it the second time. Directly after this the Wolverhampton train was approaching my signals, and I gave the "Train waiting signal" at 9.55 a.m. The signalman at Bridgeman Place then gave "Line clear," and accepted the Wolverhampton train at 9.55. I then lowered my signals for the Wolverhampton train to pass, which it did at 9.57. I did not lower my distant-signal for this train, as I knew it had passed it before I could do so. The train was stopped at my home-signal. I can see my home-signal when it is clear, but I could not see it on the day in question. I cannot say how the distant-arm for Bridgeman Place stood. The 9.25 a.m. from Birmingham was offered to me from Pleck junction at 9.59, accepted at same time, and "Train on line" same time. Not having got "Line clear" for the Wolverhampton train, Hobbs gave the "Attention signal" two or three times at intervals, and at 10.1 he got "Line clear" for the Wolverhampton train. He then offered the Birmingham train, and it was accepted at the same time. He then gave it "On line," and it passed my box at 10.3. My distant was pulled off for this train. I cannot speak as to the speed of the train as it passed me, but they do not travel so fast in foggy weather as at other times. I did not hear of the collision for some time afterwards. Inspector Bacon walked down, and informed me of what had occurred. The Wolverhampton train is due in advance of the Birmingham. They were in their proper order. The fog was very thick at the time of the collision. The trains were indicated properly. There is an electric indicator in each cabin from Pleck to Walsall cabin, which shows what train is being signalled. These indicator signals are recorded in the train-book. I had an emergency signalman in the box with me, named Hobbs. I am quite certain that signalman Hobbs signalled the Birmingham train correctly and as stated by me.

Frederick Hobbs, platform-porter, states: I have been in the Company's service five years, and for the last 2½ years I have been qualified as an emergency signalman. I have to take a spell of 10 hours in Bodley's signal-cabin once a fortnight to keep up my knowledge of block-working. I have been all my service at Walsall. I came on duty on the 22nd February at 9.30 a.m. in the Bodleys signal-box. I did not make any entries in the train-book. Burgess, the signalman, did that. After Burgess received the "Be ready" for the Wolverhampton train I at the same moment gave the Bridgeman Place box the "Shunt train" signal, not having received "Line clear" for the previous train. This was not answered, and I repeated it after an interval of a minute. It was then acknowledged from Bridgeman Place box by being repeated. Burgess then himself gave the "Train waiting" signal to Bridgeman's box, and directly after this "Line clear" was given to us, and the Wolverhampton train accepted. The Birmingham train was offered at 9.59, and accepted by me at same time, and "Train on line" was received same time. I gave one beat on the bell to Bridgeman Place, and repeated it, and at 10.1 I got "Line clear" for the

Wolverhampton train. I then offered the "Be ready" for the Birmingham train, and it was at once accepted. I then gave Bridgeman Place the indicator-signal to show it was the Birmingham train, at the same time I gave "Train on line." It passed us at 10.3. Burgess pulled the signals off for this train. The fog was very dense at this time, and I did not see the train pass. I did not hear of the collision till Mr. Bacon came down to the box. No obstruction-signal was given to us. The trains were running in their proper order, and were properly shown on the indicator from Pleck to me, and from us to Bridgeman Place. I am sure the entries in the train-book are correct. There was no one in the box besides Burgess and myself at the time that either train passed. The fogmen were out at the time I went to the box.

Jacob Edward Cleaver, signalman, states: I have been in the Company's service since August 1889, and I have been qualified as signalman since September 1893. My proper duties are those of porter, and I am stationed at Walsall. I was in charge of Bridgeman Place signal-box for a fortnight in November and December, and again for a day the first week in January. I took charge again on Thursday, 22nd February. I came on duty at 7.25 a.m. to work till 2. It is an eight hour box. There is a booking lad in the box from 8 a.m. till 8 p.m. The 8.25 a.m. goods train from Bescot to Wyrley was offered to me at 8.51, and I accepted it under the warning arrangement. I kept it at my home-signals till 9.19. I then gave it on to Park Street, and it was accepted under the warning, and it went forward to do its work, and about 9.28 I recalled the train till it was clear of the cross-over road. It stood at the down slow home-signal from about 9.30 till 9.46. At about the latter hour I lowered my home-signal to allow the train to draw down to Park Street. At 9.47 the shunt-signal was given to me from Bodley's signal-cabin. I did not acknowledge it the first time. It was rung a second time at 9.49. I then acknowledged it. I did not know what train it was that was coming, but I expected it would be a passenger train. I gave "Line clear" at 9.51, and at the same time accepted a passenger train from Bodley's. I did not receive a train waiting-signal. At 9.51 this train was given "On line," and I passed it on to Park Street, and it was accepted under warning. It was shown on the indicator as a Birmingham train from Bodley's. I asked Park Street on the telephone twice whether he could clear the coaches which were standing on the down slow line at the platform, these coaches having come off the 9.10 ex Birmingham. The second time he said, "I shall right in half a minute." There is a rule that a passenger train may be accepted whenever the line is clear in advance of the home-signal to the Birmingham end of the platform. When I received the "Line clear" from Park Street for the coaches, I gave Park Street the train on line, and lowered the home-signal. This would be at 10.2 or 10.3. I heard a good deal of whistling, but I could not be sure that the whistling proceeded from a train standing at my home-signal. If I had known it was there I should have let it into the station with the calling on arm. There was a tail lamp-man at the cabin, and there was a fogman at the home-signal. The next train I received was the Dudley train on down fast line, and I received no other train on the down slow line till it was clear at about 12.38. I do not remember receiving the attention-signal on the down slow block instrument, and I never gave the "Line clear" signal for the Wolverhampton train (which was wrongly signalled on to me as the Birmingham), and I never accepted any train on the down slow line at 10.1. The fogmen were changing their relief, and were asking me to make their tickets out for them. I instructed the train-booker to do it as I was too busy. There were three men to be relieved. Inspector Bacon was in the box also. The fireman of the first train came up to my box at about 10.8 and asked me if I knew what had happened. I said no. He said that a train had run into them while standing at the signals. I replied, what train? I have accepted no second train. He told me I had better block the up slow line, but the fast lines were clear.

Inspector Bacon, states: I have been in the Company's service 18 years. On the 22nd February I went to the Bridgeman Place signal-cabin at about two or three minutes before 10 a.m. to see how Cleaver was getting on, Cleaver having had to take the place of a man who was sick. The first thing I noticed on the down slow block instruments, was that the signalman had a train on line, and that the indicator showed the train was from Birmingham. Everything seemed to be going in proper course, and Cleaver did not seem to be worried. Three fogmen came to the box to have their tickets filled in, but Cleaver told them he was too busy to attend to them, and I did not notice any whistling which would lead me to suppose a train was standing at the down slow home-signal. I heard a noise while I was in the box, which led me to suppose some mishap had occurred. I remarked to the signalman that there was a peculiar noise, and one of the fogmen said it was the shunting in the Midland yard. I did not know of the collision till the fireman of the Wolverhampton train arrived in the box. I consider Cleaver well up to his work, and he has performed his duties satisfactorily on previous occasions. The fog was very dense at this particular time.

William Long, booking lad: I have been in the Company's service eight or nine weeks, and I am employed as booking lad in Bridgeman Place signal-cabin. On February 22nd, I came on duty at 8 a.m. till 8 p.m. I do not know the block-signal perfectly yet. I make all the entries in the train book under the signalman's direction. But if I hear a signal plainly on the bells I sometimes call it out to the signalman, and ask if it is all right before booking it. I was eating my breakfast in the signal-cabin at about 10 minutes to 10, but I was booking the trains at the same time. The entries in the train book were all made by me and so far as I know they are correct. They were all made under the signalman's direction.

W. Merricks, ballastman, states: I have been in the Company's service four years, and I have often been employed as fogman. On 22nd February I was fogging at Bodley's signal-box. I came on duty at 10 a.m. When I got to my post the signals were on, both the home for Bodley's and the distant for Bridgeman Place. I found two detonators on the down slow line. When the home-signal was lowered I took the detonators up, thinking the distant-signal had been lowered too. After I had done this I saw that the distant was not off. I had no time to get back to the rails to put the detonators down. I shouted to the driver that the top arm was off. The driver or fireman heard what I said.

Conclusion.

This collision, the effects of which were fortunately not serious, must be attributed to a mistake in block working on the part of signalman Cleaver in the Bridgeman Place cabin, who gave "Line clear" to Bodley's cabin for the Wolverhampton train at 10.1 a.m., and at the same time accepted the "Be ready" for the Birmingham train, while the former train, which he had accepted at 9.55, was still standing at his down home-signals, both trains being on the down slow line.

Cleaver does not admit that he made this mistake. On the contrary, he asserts that only one of these two trains was offered to him by, and accepted by him from, Bodley's cabin, that this train was signalled to him on the train indicator as the Birmingham train, that it was accepted by him at 9.51, and that no other train was accepted by him on the down slow line from 9.51 till about 12.38.

I am unable to find any corroboration of this statement. The evidence of signalmen Burgess and Hobbs in Bodley's cabin contradicts it, and an examination of the train books at Pleck junction, Bodley's and Bridgeman Place cabins, revealed no evidence in support of it. The entries in the train books at Pleck junction and Bodley's agree satisfactorily, and there is no reason for not accepting them as correct. But on comparing these books with that at Bridgeman Place, there are several discrepancies which appear to prove that the entries in the latter are not to be relied on, and indicate that Cleaver had become confused and did not clearly know what he was doing.

The Wolverhampton train is shown in the book at Bodley's as having been accepted by the signalman at Bridgeman Place at 9.55, and as having cleared the section at 10.1. The Birmingham train is shown in the same book as having been accepted by Bridgeman Place at 10.1, whereas in the book at Bridgeman Place there is no record of the Wolverhampton train at all, and the Birmingham train is shown as having been accepted at 9.51, which is the time, according to the evidence of Burgess and Hobbs, the Wolverhampton train was first offered to (but not accepted by) Cleaver. Both trains were travelling on the same line of rails, and Cleaver having failed to make the entries in their proper sequence of the block-signals given and received, and having lost all record of how the trains were running, appears to have mixed the two trains up in his mind, and having brought the first train to a stand at his home-signal, he in his confusion allowed the second to enter the section and thereby caused the collision.

It must be stated in his favour that he is what is known as an emergency signalman, that is a platform porter who is qualified to act as signalman when occasion requires, and he has not the experience that a regular signalman necessarily possesses. Bridgeman Place signal-cabin is an exceedingly busy one, and though Cleaver has on previous occasions taken charge of it, his difficulties on the morning in question were largely increased by the dense fog that prevailed.

The train booking lad in the cabin who had only eight or nine weeks experience, was not fully conversant with block telegraph code, and was probably of not much assistance, Moreover, three fogmen arrived in the cabin about 10 a.m. to have their tickets filled in, and though Cleaver very properly refused to attend to them, they doubtless caused an interruption in his work.

Although, therefore, Cleaver's mistake was a grave one which might have led to serious consequences, it can not be regarded as due to negligence on his part, but rather to his inexperience and to the difficulties caused by the fog. He bears a good character, and he had been on duty at the time of the collision for about 2 hours 40 minutes.

There seems to be no reason for attributing blame to any other servants of the Company.

I have, &c.,

H. A. Yorke,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

Damage to Engine.

Engine No. 2,248, working Wolverhampton train.—One buffer-casting broken.

Engine No. 1,101, working Birmingham train.—Lamp-sockets and buffer-plank broken.

Damage to London and North-Western Vehicles of the Wolverhampton Train.

No. 106 rear brake.—Both ends badly damaged; buffer-rods, castings, &c., broken; two front wheels off the rails.

No. 873 composite.—Headstock and end panels, &c. broken; Two rear wheels off the rails.

No. 226 first-class.—Headstock broken and body shaken.

No. 1,043 third-class.—Headstock and castings broken; body shaken.

No. 1,021 third-class.—Body and under frame shaken.

No. 1,953 brake.—Buffer-castings, end light, &c., broken, and draw-bars bent; two front wheels off the rails.

Printed copies of the above Report were sent to the Company on the 29th March.

LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
22nd March 1894.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in accordance with the Order of the 1st instant, the result of my enquiry into the collision that occurred on the 26th February at the London and North-Western Railway Company's London Road station in Manchester.

On this occasion, as the 3.30 p.m. passenger train from Stockport to Manchester was entering London Road station it ran into the stop-block at the end of the platform.

Four passengers are reported to have complained of shock or slight injury.

The train consisted of a side-tank ten-wheeled (four wheels coupled) passenger engine, running bunker first, and nine close coupled six-wheeled coaches. There was a brake compartment at each end of the train, and the guard was travelling in the rear brake. Both engine and train were fitted with the automatic continuous brake, which was in good working order.

No damage was done to the engine, train, permanent-way, or buffer-stops.

Description.

This collision occurred on what is known as No. 3 platform line, and the buffer-stops which the train struck are hydraulic, which probably reduced the shock.

The platform is 236 yards long, and the line is practically level for some distance. The junction-signals referred to in the evidence are 255 yards, and the station signals are 83 yards, from the end of the platform. The signalling arrangements need not be described in detail, as no question concerning them arises in the consideration of the cause of this mishap.

The following are the rules in force as to the use of the continuous and hand-brakes in entering terminal stations:—

Rule 293 (General Rule Book).—Engine-drivers must always enter such stations, or a dead-end bay at any station, at such a speed as to enable them to stop the train at the proper place by the application of the ordinary hand-brake only, and guards must watch the speed of trains and assist the engine-drivers by the use of the hand-brake when necessary.

And (general instructions in the Appendix to Working Time Book):—

Rule 14.—The continuous-brakes throughout the train being under the control of the driver, the use of the hand-brake in the vans is not required for ordinary stops, but guards must apply the hand-brake immediately on its being called for by the driver's whistle, and must in all cases use their hand-brakes to assist in stopping trains on approaching terminal stations, bay sidings, or principal stations, and must not rely on the drivers pulling up trains by means of the vacuum-brake.

Evidence.

Herbert Dawes, driver, states: I have been in the Company's service 21 years, and I have been a driver for 13 years. On the 26th February I came on duty at 9 a.m., having come off duty at 11 p.m. on the 25th. I came off duty at 8.30 p.m. on the 26th. On the 26th February I was working the 3.30 p.m. train from Stockport to London Road, Manchester. The train is due at London Road at 3.52. I was running to time. My engine is No. 3023, side tank, four wheels coupled engine, carried on 10 wheels with leading bogie. The cylinders are 17″ × 24″, and the coupled wheels have 5′ 9″ diameter. The engine is fitted with the automatic vacuum-brake apparatus combined with steam-brake for working blocks on the coupled wheels of the engine. I was running bunker first. The brake was tested before starting, and it was in good working order. It worked all right all the way down. There are five stops between Stockport and London Road. The train was a twin close coupled one, consisting of nine coaches. On approaching London Road, the London Road junction signal was against me, and I was preparing to stop at it, but when about 20 yards from the signal it was lowered. I then gave the engine steam, and shut off steam when about opposite the signal-cabin, which is about 50 yards inside the signal. My mate then applied the hand-brake, and we ran into the station with the hand-brake on, the station home-signal being off. When about half way down the platform I applied the vacuum-brake and steam-brake, and the speed was reduced by it, but when about two engine lengths from the buffer-stops, the train seemed to glide forward as though it was on ice, and we struck the stops at about two miles an hour. My mate opened the sand-valves about two engine lengths from the stops. I passed the junction home-signal at about ten miles an hour, and the station home-signal at about six or seven miles an hour. When I applied the vacuum-brake I was travelling at about three or

four miles an hour, and I had no idea that I was going to strike the stops. I applied the vacuum-brake because I thought the rails were greasy, and I wanted to have more control over my train. The usual practice is to run into the station with the hand-brake only, and sometimes it is not necessary to apply the vacuum-brake at all. With the train in question it is usual to run down to the end of the platform. If there is anything standing at the platform, the rule is that the station home-signal is kept at danger till the train has come to stand, and then the signal is lowered, and the driver is also cautioned into the station by a green hand-signal, either flag or light, from the cabin. The station home-signal was off when I first saw it, and I knew I had a clear run to the end of the platform. I am quite sure that I did not give my engine steam after passing the junction signal cabin. I do not know if the guard's hand-brake was on or not when I entered the station. I have got a copy of the general rule book and also of the appendix to the working time table. I know the rule about running into terminal stations. It is to the effect that trains are to enter such stations at such speed that they can be pulled up by the application of the hand-brake only. Under ordinary circumstances a driver is not justified in using his continuous-brake inside a terminal station, the latter brake being reserved for emergencies. I was acting upon this rule on the day in question. No damage whatever was done to my engine or train. Neither I nor my mate were in any way injured. I can only attribute the collision to the greasy state of the rails. I entered the station in just the same way as I always do. I have constantly worked trains in and out of London Road station. I have never run into the stops before. It was a rainy day. The rails near the stops were unusually greasy. No vehicles left the rails.

William Young, fireman, states: I have been in the Company's service a little over eight years, and I have been fireman for five years. I have been firing for driver Dawes about 18 months. On the 25th and 26th February my hours of duty were the same as my driver's. On the 26th February on approaching London Road station with the 3.30 train from Stockport the junction home-signal was against us when we first saw it, but before we came to a stand it was lowered. My driver gave the engine steam for a few yards, and shut it off near the junction signal-cabin. I then applied my hand-brake slightly and we ran down into the station with the hand-brake slightly on. We were running at about eight miles an hour at the time I first applied it. When we were a few coaches' length down the platform my driver applied his vacuum-brake a little. I then applied my hand-brake hard on. By this time we were three coach lengths from the blocks. I also opened the sand-valves when about two coach lengths from the blocks. I then began to think we should touch the stops. We struck the stops at less than walking pace. The rails were more greasy than usual. It was a wet day outside. The driver applied his continuous vacuum-brake hard when were about three coach lengths from the blocks.

Arthur Taylor, guard, states: I have been in the Company's service 17 years, and 12 years guard. On the 26th February I came on duty at 7 a.m. I came off duty at 5.10 p.m. on the day before, and I came off duty at the same time on the 26th. On the 26th February I was guard of the 3.30 train from Stockport to London Road. We were two minutes late leaving Stockport. The train consisted of nine close coupled six-wheeled vehicles. There was a brake compartment at each end of the train, and I was riding in the rear brake. The train was fitted throughout with the automatic vacuum-brake. The brake was in good working order. On approaching London Road we were checked at the junction home-signal, but we were not brought to a stand. I do not know where the driver shut off steam. The driver applied his automatic-brake partially at the top end of the platform. He was running then at seven to eight miles an hour. He released his brake about half-way down the platform. He re-applied it with full force when my van was about 12 coaches' length from the stops. I applied my hand-brake as soon as we passed the junction signal-box. I did not release it at all. I did not think that we were going at greater speed than usual, and I had no idea we were going to strike the stops. My train was not in any way damaged, and it went out again at 4.2 in the ordinary course. I was not hurt. We struck the stops at about walking speed. The rails were very greasy. It was a wet day.

Herbert Dawes, driver, recalled, says: I am not quite sure whether I applied the continuous-brake slightly at the top end of the platform. I know I had my hand on the brake handle at the time, and I might have applied it very slightly. But I applied it full force when half-way down the platform.

Conclusion.

This slight collision must be attributed to an error of judgment on the part of driver Dawes who, owing to a miscalculation as to the speed of his train, and, as he asserts, to the greasy condition of the rails, failed to bring his train under proper control in sufficient time to enable him to pull up without touching the buffer-stops. The driver, as is usual in these cases, offered as his excuse the greasy condition of the rails. But, in my opinion, this cannot be regarded as a satisfactory excuse for an experienced man such as Dawes, who should know how to make due allowance for greasy rails, which in this climate, and, as I am informed, especially at Manchester, are of common occurrence. It is probable that the fact that the engine was running bunker first, and that it was therefore not possible to apply sand to the driving wheels of the engine, may have contributed to the mishap.

Driver Dawes, who bears a good character, had been on duty for 6 hours 52 minutes at the time of the collision.

Dawes states in his evidence that the rule in force on the London and North-Western Railway as to the mode of stopping a train in a terminal station is to the effect that the hand-brake only is to be used as a rule inside such stations, and the application of the continuous-brake is only justified in the case of emergency. Mr. Whale, assistant locomotive superintendent, informed me that this is regarded by the Company as the correct interpretation of the regulation (No. 293 in the General

Rule Book). But it appears from the evidence of the fireman and guard, and also from the driver's reluctant admission, that the latter applied the continuous-brake slightly on entering the station, that he afterwards released it when about half-way down the platform, and that he finally re-applied it with full force on approaching the buffer-stops. I am unable therefore to agree with driver Dawes, when he asserts that he was entering the station in conformity to the rule. Had the train been travelling strictly at hand-brake speed when entering the station it would not have been necessary to apply the vacuum-brake even slightly at that time, and, taking into consideration that the platform is 236 yards long, there would have been no difficulty in pulling up the train short of the stops by means of the hand-brake.

It is satisfactory to note that the London and North-Western Railway Company do not permit the continuous-brake to be used in stopping trains in terminal stations, except in cases of emergency. This is the course that for some years past the inspecting officers of the Board of Trade have recommended. But the instructions to guards in the Appendix to the Working Time Book as to the mode of entering terminal stations are as follows, viz.:—"Guards must in all cases use their hand-brakes "to assist in stopping trains on approaching terminal stations, bay sidings, or "principal stations, *and must not rely on the drivers pulling up trains by the means of the "vacuum-brake.*" The words in italics would seem to imply that drivers are permitted to use their continuous-brakes in the circumstances described, and these words are therefore somewhat inconsistent with the interpretation of Rule 293, already referred to. As it is very desirable that there should be no ambiguity in this matter, I am inclined to suggest that the words in italics should be omitted in future from the instructions issued to guards.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

H. A. Yorke,
Major, R.E.

Printed copies of the above Report were sent to the Company on the 11th April.

MIDLAND GREAT WESTERN RAILWAY OF IRELAND.

Board of Trade, (Railway Department.)
8, Richmond Terrace, Whitehall, London, S.W.,
28th February 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 12th ultimo, the result of my enquiry into the causes of the collision which occurred on the 6th ultimo at Moate station on the Midland Great Western Railway of Ireland.

In this case, during a fog, the up goods train from Westport, due to leave Athlone at 3.45 a.m., was run into at 8.25 a.m. by the 6.10 a.m. up passenger train from Galway, due at Moate at 8.22 a.m.

There were only three passengers in the train, and one of these has complained of being shaken.

The driver of the passenger train, and a traffic inspector travelling as a passenger, were injured.

In the passenger train, which consisted of engine, tender, three carriages and a van, fitted throughout with the automatic vacuum-brake, the engine had the smoke-box crushed in, the chimney knocked off, the buffer-beam and buffers damaged, the motion-plate and way-beam shaft broken, and the expansion links damaged.

In the goods train, which consisted of engine, tender, one empty and 36 loaded waggons, and a brake-van, nine waggons were damaged, two of them badly, and the brake-van was broken up.

In consequence of the injuries sustained by the driver of the passenger train, I was unable to examine him when I commenced the enquiry, and have only recently been able to do so.

Description.

Moate station is situated on a straight portion of the line, and is approached from Athlone, when nearing the station, on easy gradients. It is properly protected by signals which are interlocked with the points, both being worked from a raised signal-

cabin on the down side of the line. The line is worked upon the absolute block system, Castlemaine, at the 73rd mile post, $4\frac{3}{4}$ miles distant, being the next block-station on the Athlone side.

The collision occurred at about 8.30 a.m., some 50 yards on the Athlone side of the up home-signal during the prevalence of a fog, and of a very severe frost.

Evidence.

1. *James Ward*, acting guard, $3\frac{1}{2}$ years' service, acting occasionally as guard for the last $2\frac{1}{2}$ years.—I commenced work at Athlone on January 6th at 3 a.m. to act as guard with the 6.30 p.m. Westport goods train due to leave Athlone at 3.45 a.m. The train left Athlone at 5.10 a.m.; it had come in nearly to time, but was detained at Athlone waiting for the engine. On leaving Athlone the train consisted of engine, tender, 36 loaded waggons, one empty waggon, and the brake-van. I was alone in the brake compartment, and there was a drover in the drover's compartment of the van. The train stopped at Moydrum Bog between the 74th and 75th mile-posts, to divide the train before going up the rising gradient. I put the brake on the van and sent forward 18 waggons with the engine, and went back to protect the train. The engine returned on the up road for the rest of the train, at about 6.55 a.m., after about an hour and a half's detention, the time having been occupied in disposing of the waggon at Moate. In consequence of the severe frost it took about 15 minutes to start the rear portion of the train, and we reached Moate at about 7.50 a.m., the driver stopping with his engine at the water column at the up end of the up platform. I then arranged with night signalman Foreman to set back the second portion of the train on to the down main line so as to allow of the whole train being united. The first 18 waggons were standing in the cattle siding on the down side of the line, and after the engine had set back the rear portion of the train to the position where the collision afterwards occurred, it took off the three front waggons and put them into the goods store siding on the up side of the line to lighten the train, which was too heavy owing to the severe weather. The engine then went across the road and picked out the waggons in the cattle siding and put them across on to the up line, after which the engine came to the front of them and set them back on to the rear portion of the train. After this I coupled the train together, the operation being completed about 8.30 a.m. The train had started—the van having just got into motion,—in order to draw ahead and shunt on to the down line through the eastern cross-over road, when the collision occurred before I had heard the passenger train coming, I being at the time in the 6-ft space about 13 waggons from the van. The goods train stopped about two waggons' length after being struck, and two waggons were off the rails, the fourth and sixth from the rear of the train, and the van and two waggons in front of it were more or less broken up. The drover had left the van before the collision to proceed by the passenger train. There was a pretty heavy fog and it was freezing hard at the time of the collision; there was a little snow on the ground. I could see nearly the length of the train, and certainly 200 yards. I did not notice the Moate distant-signal as I passed it, but I saw the lamp of the home-signal showing white, and I saw that the signal had been put up to danger after I had stopped. I could not say what its position was when the collision occurred. I did not look at the signals after the collision. I had had no communication with the day signalman Rochford, and had had no further conversation with Foreman than the one I have alluded to. I do not know what signalman moved the points for the several shunts; the last points moved were those of the east cross-over road, when it was nearly half-past eight. My day's work would have been over about 1 p.m. if there had been no mishap.

2. *Arthur Foreman*, signalman; $6\frac{1}{2}$ years in the service, signalman all the time.—I have been $2\frac{1}{2}$ years at Moate, where I came on duty at 7 p.m. on the 5th to remain till 7 a.m., though I actually remained till 7.57 a.m., because the up road was blocked by goods train. The other signalman Rochford came on duty at 7 a.m., and I remained with him till I had seen the second portion of the goods train come in. The first portion of the train arrived at 6.50 a.m., and was put away in the cattle bank, the engine having previously run round its train. The engine then went back for the rest of the train a few minutes before Rochfort had come on duty. I had blocked the road to Athlone at 6.45 a.m. with the obstruction danger-signal, and I removed this signal at 7.54 a.m., the second portion of the train having arrived at 7.53 a.m. The obstruction signal had also been given to the 73rd mile cabin at 7.21 a.m., where the signalman had come on duty at 7.5 a.m. When I left the cabin the block-signal between Moate and 73rd mile cabin was at "line blocked," and all the up signals were at danger. I had taken off the up home-signal but not the distant-signal to admit the second portion of the goods train, and I had afterwards put it to danger. Before leaving duty I had told the guard Ward to move the whole of the second portion of the train back through the western crossing on to the down line, and afterwards to get his train united on the down line and remain there till the passenger train, due at 8.22 a.m., had passed. I had no intention of allowing the goods train to proceed to Streamstown in front of the passenger train. Rochford heard every word that passed between me and the guard. After the collision I found that the arrangement I had made with guard Ward had not been carried out. Had I been on duty I should not have given "Line Clear" till the goods train had been proceeding on its journey some 300 yards past the signal-cabin, or had been shunted clear of the up line. When I left duty I could see the side-lights of the guard's van, which was at the down end of the up platform (about 120 yards off), and I could see the guard himself, but I could not make out his features till he came within about 70 yards. I could not see the arm of the up home-signal. Had I been on duty I should not have given "Line clear" to 73 mile cabin until the guard had come to the box and reported that the up road was clear.

3. *Daniel O'Neill*, station-master at Moate; 24 years' service, 13 years station-master, six months station-master at Moate.—I was on duty on the 6th January when the collision occurred. I was at the time going into the office to issue tickets. I had previously been on the up platform, and when I had left it the engine was running round the front portion of its train. I had no idea what was going on in the signal-cabin. I do not know whether the up signals were or were not at danger. The fog was not so dense but that I could see clearly for 120 yards and for perhaps double that distance, and it was getting lighter rather than denser. I heard the noise of the collision when I was in the office about 8.25 a.m. After it occurred I asked Rochford, who had come on duty at 7 a.m., how he had come to take on the train with the road blocked by the goods train: he said that 73rd mile cabin gave him the "Be ready," and that he was going to block him, but seeing that the engine had only so little work to do he accepted the

train under the belief that the line would be clear. I have never known anything of this kind to occur before. Rochford is a respectable man and has behaved well during the six months I have been here. I know nothing about the signals except that I saw the home-signal at danger after the collision. The wreckage had fallen on the wires. There were only three passengers in the train and one of these complained. I came on duty at 7.30 a.m.; the fog was then lifting, and I did not think it necessary to employ fog-signalmen in consequence of the distance to which I could see.

4. *John Rochford*, signalman, 13 years' service, 11 months signalman.—I have been all the 11 months at Moate, where I came on duty at 7 a.m. on 6th January, to remain till 7 p.m. Night signalman Foreman was in the cabin when I went on duty, and remained there till nearly 8 a.m., when the second portion of the goods train had arrived. I heard what passed between him and Ward about disposing of the goods train, namely, that the up line was to be cleared of the second portion of the goods train, and the two portions were to be united on the down line. The first points made were No. 11 for the goods siding, and I first thought that all the second portion of the train had been put through them; the engine then came out of the siding and whistled for the west cross-over road. I opened it, and the engine went through it. I closed it and made No. 12 points; about three shunts then took place in connection with No. 12 points; the engine then came out and crossed with the waggons through No. 15, left the waggons on the up line, came back through No. 15, went up to No. 18, set through onto the up line, and then backed on to the waggons. I thought the engine then wanted to set back with these waggons through No. 15, and I told the driver to hurry up and go through No. 18 on to the down line. He had come forward and had got as far as No. 18 when the collision occurred at 8.28 a.m. I was still under the impression that the second portion of the goods train was in the goods siding. I had received the "Be ready" from 73rd mile cabin at 8.1 a.m. when the shunting was going on at No. 12 points. On this I asked the station-master to tell the foreman porter and guard that no shunting could take place on the up line as the morning was foggy, and I had got "Be ready" for the passenger train. I had accepted the "Be ready" on receiving it, and at this time, as I believed, the up line was clear. I received "Train on line" at 8.20 from 73rd mile cabin, and at about 8.15 I had opened No. 15 cross-over road. This was against the block rules, but in accordance with my practice, I having done this 40 or 50 times by request of the station-master or foreman porter. I never took off my signals for the passenger train. At the time of the collision I could see from the cabin as far as the Athlone end of the platform. I had gone down to the Athlone end of the down platform, (100 yards from the cabin), and could thence see as far as the goods store, but saw nothing then standing on the up line. This was about 8.3 a.m.; after this the fog remained the same. I am confident the two portions of the goods train were not united; but there were about 20 waggons distance between the two portions when the collision occurred. I thought the station-master would have told me had the line been blocked, and that this caused the necessity of my being informed by the guard of the line being clear. It is the case that with me, but not with Foreman, that shunting has been allowed after the "Be ready" signal has been received. I know this is against the rules.

5. *James Bolger*, driver, 18 years' railway service; 17 years on the Dublin, Wicklow, and Wexford Railway, 4½ years driver there, and one year on the Midland Great Western Railway.—I came on duty on January 6th at 2.30 a.m. to sign off about 1 p.m. I was driving engine No. 66, a six-wheeled coupled goods engine and tender, and left Athlone with the Westport goods train at 5.10 a.m., having first to stop at Moate for water. I had on a train of 37 waggons and a van, all loaded but one. I made no objection to the load. After leaving Athlone I found I could not draw the train up the bank of 1 in 100 and it was decided to divide the train, and I went forward with 18 waggons, leaving the rest of the train at Moydrum Bog between the 74th and 75th mile-posts and ran into Moate with distant and home signals off, crossed the line, ran round the waggons to put them away in the cattle sidings on the down side, and then recrossed the line and went back on the up line for the rear portion of the train. I had some difficulty in getting it into motion on account of the severe frost, and lost 15 minutes in doing so. I arrived at Moate about 7.50 a.m., drawing up at the water column at the up end of the up platform. The arrangement then made was to put the three front waggons in the goods store, so as to lighten the train, leaving the others on the up line, then cross the line, bring out the 18 waggons, and unite the train up on the up line. This arrangement was carried out, and the 18 waggons were backed on to the rear of the train. The guard then coupled up the train and I had moved forward about 30 yards when the collision occurred, the engine being at this time about the Athlone end of the platform. On hearing the crash I gave the engine more steam. I was not knocked down nor was the fireman. I heard no whistle, but my engine was blowing off at the time. After the collision I found the train was separated about the middle, but no couplings nor drawbars were broken. When I passed the signals with the second portion of the train they were both lowered. I could see the side light of the van at the time of collision; the fog had lifted a little at this time. From the time I had passed through the east cross-over road to the collision there were about three minutes. I could not say whether or not the home-signal was lowered when the collision occurred. I saw the driver of the passenger train after the collision; he said nothing about the signals. He was injured in the leg.

6. *James Carey*, guard, 37 years' service; guard 31 years.—I commenced work about 6 a.m. on January 6th in charge of the 6.10 a.m. passenger train from Galway, to sign off about 11.30 a.m. We reached Athlone at about 7.58, three minutes late. We left at 8.8, three minutes late, the train consisting of engine, tender, third-class, second-class, and first-class carriages and van, four vehicles coupled in the order stated, the train being fitted with the automatic vacuum-brake, which I could apply from the van if necessary. There was one female in the middle compartment of the third-class carriage, and two post office linesmen were in the last compartment of the second-class carriage. Inspector Dalton was with me in the van. After leaving Athlone I found the signals off at 73rd mile cabin, and on approaching Moate, where the train had to stop, I was looking out for signals, but failed to see the distant-signal on account of the fog, which was so thick that I could not see more than about 14 yards. I could not see the goods store (176 yards distant) from the point of collision. I saw nothing of the home-signal, and the collision took me quite unawares, and I was knocked down on the van floor. I think the speed just before the collision was about 20 miles an hour, as usual. I had felt a sharp application of the brake which knocked me down on my hands and knees, and as I was getting up I was knocked down a second time by the collision, which occurred at 8.25 a.m. The engine might have travelled 20 or 30 yards after the crash. On going to the driver he said the distant-signal had been down. On going back to protect the train I found the distant-signal off; the wire was on the down side of the line. The driver whistled in the ordinary way when near the distant-signal. I did not hear any brake-whistle just before the collision. Nothing was damaged or derailed in the vehicles of my train.

7. *Eugene Clarke*, fireman; 10 years' service, five years fireman.—I commenced work on January 6th at

4.30 a.m., to sign off at 12.30 p.m. My driver was John Spratt, with whom I have been 12 months. I started from Galway at 6.10 a.m. with a passenger train for Dublin. My engine was No. 48, a six-wheeled four wheels coupled engine, coupled in rear, and a six-wheeled tender. The automatic vacuum brake applied to the coupled wheels of the engine, the tender wheels, and to the four wheels of each of the four vehicles of the train. We left Athlone a few minutes late, having first to stop at Moate. The signals were right at 73rd mile cabin, and on approaching Moate I myself saw the arm of the distant-signal well down when about 50 yards off, the fog being too dense to see it before. I was on the left side of the foot-plate, and the signal was on that side. The driver saw the signal as well as me. The next thing we saw was the van of the goods train, about 16 or 17 yards off,—it might be a little more or less,—on the Athlone side of the home-signal, which I did not see at the time. Steam had been shut off some two miles off, and our speed was about 16 or 17 miles an hour on seeing the van, the speed having been checked before this for stopping at the station. On seeing the van the driver applied the vacuum-brake with full force, and I applied the hand-brake. Those brakes were on before the van was struck at a somewhat reduced speed. We ran a van's length after striking. Nothing was damaged except the engine, and no wheels left the rails in my train. I was not hurt. I did not jump, nor did the driver, who was injured by the funnel of the engine coming on to the foot-plate. I am sure the goods train was coupled up when the collision occurred, and I believe it was all just in motion. The driver had given the usual whistle before reaching the distant-signal, and between it and the home-signal.

8. *John Spratt*, driver; 21 years' service, driver 11 years.—On January 6th I commenced work at Galway, signing on at 5 a.m., to sign off at 12 noon. I started at 6.10 a.m. with a passenger train for Dublin, my engine being No. 48, running engine first. My place is on the right. The train consisted of four vehicles. The whole train was fitted with the automatic vacuum-brake, the working pressure being about 20 inches. All went right as far as Athlone, which we left two minutes late, the fireman and I being alone on the engine. I found the signals down at 73rd mile cabin, where the fog was thick. I shut off steam about 1½ miles from Moate for stopping at the station, speed being about 25 miles an hour. I never reapplied it. On approaching Moate distant-signal I saw the arm down when about 10 yards off, the signal being on the left of the engine. The arm was about half-way down, and would have shown a white light. The speed was about 25 miles an hour at the distant-signal. I slightly applied the brake after passing the distant-signal, and I was the first to see the van of the goods train about 20 yards off, speed being then about 19 miles an hour, the fog having prevented my seeing it sooner. I had time only to apply the brake with full force and to put the reversing wheel into middle gear, when we struck the van with slightly reduced speed. My engine went about 50 yards after striking, my engine remaining close up to the débris of the van when it stopped. I am sure that the van was at rest when I struck it, and that the train was all coupled together, but the front of the train might have been in motion. The funnel of my engine was knocked off by the van on to the foot-plate, and struck the calf of my right leg, causing serious injury, from the effects of which I am still on the sick list. I have often passed the Moate up distant-signal, and never knew it working badly before. I spoke to the station-master about the goods train being in my way, and he said he thought I should have been stopped at 73rd mile cabin.

9. *Daniel O'Neill*, the Moate station-master, absolutely denies Rochford's statement as to the block rules being constantly broken with his (O'Neill's) consent, and states that he never knew of any shunting being allowed after a train had been taken on, and that he would not have sanctioned it being done. The foreman porter also says that Rochford's statement is not true.

Conclusion.

The immediate cause of this collision was the breach of block-telegraph regulations on the part of Rochford, the signalman on duty at Moate station, inasmuch as about a quarter of an hour after accepting the "Be ready" signal for the up passenger train (from the signal-cabin at the 73rd mile-post, 4¾ miles distant), he, by his own acknowledgment, allowed the up line to be occupied by some waggons of the up goods train which had preceded the passenger train, depending upon the up home-signal for the protection of these waggons, whereas the regulation distinctly says that no train, engine, or vehicle of any description may be shunted foul of any line on which a passenger train is approaching after the "Be ready" signal for the passenger train has been accepted. The breach of this rule was a very serious offence, and this more especially during a fog of such considerable density as to prevent Rochford seeing the rear portion of this same goods train which unknown, he says, to him, was standing on the up main line, with the front waggon about 130 yards west of the west end of the down platform, or about 240 yards west of the signal-cabin. Rochford stated that the rule had been frequently broken upon previous occasions at the request of the station-master and foreman-porter at Moate, a statement denied by each of these men and one which I trust is incorrect; but supposing Rochford to be correct, it still leaves with him the direct responsibility for a breach of the block telegraph regulations. Rochford has been 13 years in the service and a signalman 11 months, all the time at Moate station, where he had come on duty at 7 a.m. (about 1½ hours before the collision) for 12 hours.

In consequence of the severe frost and the slippery state of the rails the engine of the goods train was unable to haul its load of 37 waggons and van up the rising gradients which commence between the 74th and 75th mile-posts and the train was divided and taken to Moate in two portions in accordance with rule No. 134, the front portion being placed on a siding on the down side of the line, the rear portion, consisting

of 19 waggons and the van, being stopped with the van 50 yards on the Athlone side of the up home-signal, where it was afterwards run into. The three front waggons were then taken off this rear portion and placed in a siding on the up side of the line, so as to lighten the train to this extent, when it again went forward on its journey, signalman Rochford being, he says, under the belief that the whole of the rear portion had been placed in this siding, and none of it left standing on the up main line. The engine then drew the front portion of the train out of the siding, placed it on the up line, ran round from one end to the other by means of the two cross-over roads at the station, backed the front portion on to the rear portion, and had just started forward with the whole train to shunt it on to the down line through one of the cross-over roads, when the collision occurred.

The passenger train, consisting of engine, tender, and four vehicles fitted throughout with the automatic vacuum-brake, had left Athlone at 7.58 a.m., three minutes late. The driver, Spratt, says that he shut off steam about $1\frac{1}{2}$ miles from Moate, when the speed was about 25 miles an hour (this must be a considerable understatement, as the train was keeping time and its speed to do this must average $33\frac{1}{3}$ miles an hour), that on approaching the Moate distant-signal, which on account of the fog he saw only about 10 yards off, he saw the arm hanging about half-way down, in such a position that it would have shown a white light, that the speed was reduced to about 19 miles an hour, when about 20 yards off he saw the van of the goods train on the line in front of him and that he had only time to apply the vacuum-brake with full force and to put the reversing wheel into middle gear before striking the van, after which his engine ran about 50 yards. He was injured in the leg by the funnel of the engine being knocked off by collision with the body of the van and falling over the cab of the engine on to the foot-plate.

Clarke, Spratt's fireman, mainly corroborates the latter's evidence, except that he saw the arm of the distant-signal, hanging well down, 50 yards off instead of only 10 yards. He had time to apply the tender hand-brake after seeing the van of the goods train and escaped without injury.

Carey, the guard of the passenger train, missed seeing the Moate distant-signal on account of the fog, which was very dense, was thrown down on his hands and knees in the van by a sharp application of the brake just before the collision, and as he was getting up was knocked down again by the collision itself. On going back to protect his train he found on approaching the distant-signal that the arm was still hanging down in the position described by his driver and fireman.

The fact of the arm of the distant-signal being found still hanging down by guard Carey, some time after the collision, may be accepted as corroborative of the evidence of driver Spratt and fireman Clarke that it was in that position when they passed it. This could hardly have been owing to any action of signalman Rochford, who must have had all the signal-levers in the position of danger when he was allowing the shunting operations connected with the goods train only a very short time before the collision and cannot be supposed to have been so foolish as to take off the home and distant signals after the goods engine had passed through the cross-over road (the use of which had locked the levers working these signals at danger) with the knowledge that the engine and part of the goods train were occupying the up line. Signalman Foreman also states that he had not taken off the distant-signal to admit the second portion of the goods train, whereas driver Bolger says that he found this signal off. I therefore think that in consequence of the very sharp frost, accompanied it is stated by a slight fall of snow, the arm of the distant-signal had been frozen in the *off* position and had not returned to danger after the lever had been put into that position upon the arrival of the first portion of the goods train.

If this view of the case is a correct one it absolves driver Spratt and fireman Clarke from blame in not attending to the indication of this signal had it been at danger; but they could hardly have been keeping as good a look-out as they ought to have done as they approached the station after passing the distant-signal, or they might have seen the van of the goods train at least 100 yards off (according to the weight of the evidence as to the density of the fog), and in that case, with the ample brake power available, they might have stopped their train in time to avoid the collision.

Spratt had been on duty about $3\frac{1}{2}$ hours, and Clarke about four hours when the collision occurred, their hours of duty being respectively seven and eight.

The fog on the morning in question was certainly of sufficient density to have required the employment of fog-signalmen: and had there been a fog-signalman on duty at the Moate up distant-signal he would have seen that this signal was not working properly, and would have warned the driver of the passenger train

accordingly. The Moate station-master and the foreman porter on duty are responsible for the omission to employ fog-signalmen.

Had the instructions of signalman Foreman (who had been relieved by signalman Rochford)—viz., to have the whole of the goods train placed and kept on the down line till after the passenger train had passed,—not been imprudently departed from, no collision would have occurred.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) C. S. Hutchinson,
Major, R.E.

Printed copies of the above Report were sent to the Company on the 30th March.

NORTH BRITISH RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
30th March, 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 15th instant, the result of my enquiry into the circumstances attending a collision which took place on the 12th instant at Castle Cary on the North British Railway.

In this case, the 11 a.m. up express passenger train from Glasgow to Edinburgh (consisting of engine and tender, two third-class, two first-class, and one third-class carriages, and guard's brake-van, fitted throughout with the Westinghouse brake), overran the up home-signal at Castle Cary at about 11.23 a.m., and came into violent collision with a train of 15 goods waggons, which were being shunted back into an up siding.

The engine and tender, the two leading vehicles, and the leading pair of wheels of the third vehicle in the passenger train left the rails, running for about 82 yards before coming to a stand; and 14 of the goods vehicles were thrown off, seven of them falling over the top of a high embankment and viaduct, and six others being piled up into two heaps. The engine attached to these waggons was not derailed or damaged, but was driven back for several yards.

Ten passengers are returned as having been injured, and the whole of the vehicles in the passenger train, and all the goods waggons were damaged, eight of the latter being practically broken up.

About 43 feet of the parapet wall of the viaduct were knocked down, and the permanent-way was much damaged.

(For full return of damages to the rolling stock and permanent-way, *see* Appendix.)

Description.

Castle Cary station is 2 miles 54 chains east of Dullatur station, and 1 mile 54 chains west of Greenhill station, the nearest block-signal stations in each direction.

The line runs nearly due east and west, and between Dullatur and Castle Cary is on a 99 chain curve to the south, and on a gradient of 1 in 1,200 falling eastwards.

There are sidings on both sides of the line east of Castle Cary station platform, the signal-cabin, which contains 11 working levers, being 116 yards east of the station. The points and signals are interlocked, and absolute block working is in force.

The only signals to which it is necessary to refer are the up signals, the particulars of which are as follows:—

Up advance-signal on the left side of the line, 396 yards east of the cabin.

Up home-signal, on the left side of the line, at the west end of the station, 230 yards west of the cabin.

Up distant-signal, on the right side of the line, 1,058 yards west of the cabin.

There is a good view of the two last-named signals, which can be seen from an approaching engine for 800 yards, and 950 yards respectively, the view of the home-signal being perfectly unobstructed for the last 500 yards.

The point of collision was nearly opposite to the cabin, being actually 226 yards inside the home-signal, and the up siding-points are 260 yards inside this signal.

The line east of the station runs on to a long masonry viaduct, with an extreme height of 87 feet, the parapet wall commencing close to the up siding-points.

Evidence

James Bell states: I am assistant engineer to the North-British Railway. I produce a plan of Castle Cary station, showing the place where the collision took place on the 12th instant. The signals are marked upon the plan. The up distant-signal is 1,058 yards, and the up home-signal is 230 yards west of the signal cabin, and the point of collision is nearly opposite to the cabin, and 226 yards inside the home-signal. Both these signals are well placed, and can be first seen from an approaching engine for 800 yards, and 950 yards respectively. Netherwood siding up home-signal is 506 yards west of Castle Cary up home-signal. Dullatur, the next block-signal cabin, is 2 miles 54 chains from Castle Cary. The line from the distant-signal to the point of collision is on a curve to the left, with the radius of 1 mile 19 chains, and on a falling gradient of 1 in 1,200.

George McLeish states: I have been four years in the service, a signalman for three years, and at Dullatur for two years. On the 12th instant I came on duty at 7 a.m. for 12 hours. There are 14 working levers in the box, and four block instruments. There are about 170 trains passing in 24 hours, and there is a certain amount of shunting. The following are the block-signals recorded for a light engine which immediately preceded the 11 a.m. up express:—

Offered from Croy at	10.33 a.m. (not accepted).
Accepted at - -	10.36 a.m.
Passed at - -	10.43 a.m.
Offered to Castle Cary	10.43 a.m. (accepted).
Given on line - -	10.43 a.m.
Train out of section (received).	10.46 a.m.

The signal for the 11 a.m. train are as follows:—

Offered from Croy at - -	11.18 a.m.
Accepted - - -	11.18 a.m.
Passed - - - - -	11.22 a.m.
Offered to Castle Cary -	11.18 a.m.
Accepted (with line clear signal) - - - -	11.18 a.m.
Given on line - - -	11.22 a.m.

Train out of section signal not received.

On the down line the 10.40 a.m. goods train from Falkirk was offered to me at 11.10 and accepted, but the signal was cancelled at 11.22. It was a fine clear morning. I did not notice anything unusual about the 11 a.m. train as it passed. The driver was looking ahead as he passed, and the train was running at the ordinary speed. The usual time taken to run from Dallatur to Castle Cary with express train is three minutes. The correct time is sent to the cabin every day at 1 p.m. The clock was then two minutes fast.

Daniel Donald states: I have been in the service for seven years altogether, and about five years a signalman, and at Castle Cary for a fortnight. Previous to that I was at Waterside for over two years. There are 11 working levers in the box at Castle Cary, and four block instruments. The up siding-signal lever is No. 15, and the up distant, home, and starting signal levers are Nos. 8, 9, and 10. The signals and points are properly interlocked, and I can see all three signals from the cabin. On the 12th instant I came on duty at 6 a.m. for 12 hours. The signals were all working properly, and I got no complaint from anybody all through the day that they were not working properly. At 11.11 a.m. the 10.40 down goods train from Falkirk arrived. I had offered it to Dullatur at 11.8, when I had got it on line from Greenhill, and it was accepted, but I recalled it at 11.20. It had some work to do at the station but had no waggons to put off. The waggons it had to lift were in the up sidings. I was not informed what the work was that the train had to do, but when the train stopped the engine was uncoupled and the driver whistled. He gave three whistles for the crossover road, and I turned the points and set him across. That would be at about 11.12. He had not done any shunting on the down line. I did not know how long he would be occupied on the up line. After getting on the up line the driver whistled for the siding, and I drew the points. The engine then went in, coupled on 10 or 12 waggons, and drew them out on to the main line. The guard, who had gone to the siding, then uncoupled the last of the waggons, and I went to my window and asked the second guard what he was going to do. He said he was going to shunt back this waggon on the up main line. I said he could not do it, because I had accepted the passenger train. This waggon was coming back on the main line, and I shut the siding points. I drew the crossover road points to let the waggon cross on to the down line. It went across on to the down line. I told the second guard, who was standing opposite to the box, to get inside, and as soon as I had shut the crossover road points I opened the up siding points again. I went to the window and waved the driver back. He was coming back, and the head guard uncoupled the two rear waggons. The second guard turned some hand-points to let these two waggons run into the siding nearest the main line. The driver had to pull up to let these waggons run away, and the next thing I saw was the passenger train coming round the end of the platform. I had not heard it, or heard any whistling. When I first saw it the engine was passing the home-signal with steam on. I roared to the second guard of the goods train to stand out of the way as there was going to be a smash. I ran to the window nearest the station with a red flag, and waved it, but the passenger train smashed into the waggons then being pushed back into the siding, the points of which were open. The engine of the passenger train was still in steam when it struck the waggons. The engine was not reversed, but the train was coming in just as an ordinary passenger train does. After the engine struck the waggons I saw the driver working at the handle for shutting off steam, and the fireman at his brake. The continuous-brake was not applied before the collision. I had no conversation with the driver after the collision, which took place at 11.22. The following are the block-signals recorded in my book for the light engine which preceded the express on the up line:—

Offered from Dullatur at -	10.40 a.m.
Accepted at - - -	10.40 „
On line received - -	10.40 „
Passed at - - - -	10.45 „
Train out of section given -	10.45 „

The following are the signals for the 11 a.m. up express from Glasgow:—

Offered from Dullatur -	11.17 a.m.
Accepted - - - -	11.17 „
Arrived - - - -	11.22 „
Offered to Greenhill - -	11.20 „
Accepted - - - -	11.20 „
On line received from Dullatur -	11.20 „

It is due to pass at 11.23. I believe my clock was right. At 11.17, when I accepted the train, the loose waggon was just going through the crossover road, and the engine and the other waggons were on the main line. Absolute block-working is in force between Dullatur and Castle Cary under the ordinary rules. There are no special rules at this cabin. I know the rules, and know that it was contrary to the rules to have accepted the express when the goods engine and waggons were on the up line. My reason for doing so was that I thought I could get the waggons and engine back into the siding before the express arrived, and I wished to avoid delaying the express. My signal-levers were all at danger, and I

could see from my box that both the up home and up distant signal arms were at danger. I looked when I accepted the train at 11.17. The distant-signal arm was not drooping. I made my bookings at the time. I got the goods train offered from Greenhill at 11.8, just as I had come up from shutting a gate on the up side.

John Drummond states: I have been nearly 17 years in the service, and over 5½ years a driver. I have been constantly driving on the Edinburgh and Glasgow line. On the 12th instant I came on duty at Cowlairs at 4 a.m. to work till 3.40 p.m., booked time. I had one trip to make from Sighthill to Falkirk and back with an intermediate goods train. My engine (No. 281) is a six-wheel-coupled goods engine, with a six-wheeled tender. I left Falkirk at 10.22 a.m., on the return journey, with eight waggons on. We did work at two or three stations, and left Greenhill at about 11.5 or 11.6 I think. We arrived at Castle Cary at about 11.13, being before time. I stopped my train with the engine a little west of the signal-box. It was uncoupled and drew ahead with the three front waggons, which I put into the down siding. I then whistled for the cross-over road, and went across on to the up line. The guard signalled to me to go across. I went past the up siding points and whistled for them. I then went in and pulled out 18 to 20 waggons. We threw one across on to the down main line, and then drew up. I then got a signal from the guard to come back, and I was still coming back under this signal, when the collision took place. I was still moving. I first saw the express engine when it was about 50 yards or so from the rear waggon. I cannot tell whether steam was on or off. I saw black smoke coming from the funnel. I tried to get off my engine, as I saw there would be a collision. I just got off on the six-foot side in time, and so did my mate. My steam was off, and my engine was in forward gear. Three of the waggons were pitched over the embankment just at the end of the viaduct, and 14 of them were broken up. My engine was driven ahead for some yards. I had no conversation with the driver of the express after the collision. I never saw the up distant-signal at all, so I cannot speak as to its position. I saw the up home-signal when we arrived, and it was standing at danger. I saw it again after the collision occurred, and it was still at danger. At the time of the collision the siding points were open and the siding-signal off. I have never had any complaint to make of the signals at Castle Cary.

Alexander Piters states: I have been four years in the service, and 2¾ years a fireman. On the 22nd March I was fireman with driver Drummond. I have heard my driver's evidence, and it is correct.

Robert Maitland states: I have been 6½ years in the service, and a goods guard all the time. On the 12th March I came on duty at 4.30 a.m. at Sighthill to work till 3.10 p.m. That is my usual day's work. On the return journey from Falkirk we started at 10.22, the booked time being 10.40. We had a train consisting of seven loaded waggons and brake-van. We dropped a waggon at Lime Road, dropped one at Rough Castle, dropped four at Bonnybridge, dropped one at Greenhill, and lifted three loaded and 10 empty waggons at Greenhill. We left Greenhill at 11.8 with 5 loaded and 10 empty waggons, and brake-van at the rear. I was riding in the van with my mate. We had three loaded waggons to put off at Castle Cary. We stopped a little beyond the signal-box at Castle Cary. I uncoupled behind the third waggon, and the engine put these into the down siding. The clerk from the station came, and told me there were four loaded waggons to lift from the up sidings. I told the driver, and he whistled for the cross-over road, and went across, and then whistled for the up siding. He went in and coupled on 18 waggons, empty and full. The rear waggon was one we had to lift, and the others we had to lift were three or four waggons ahead. I signalled to the signalman, and the rear waggon was knocked through the crossover road, which was then closed again. The train was drawn up beyond the siding points, and I signalled the driver back, uncoupling two waggons which ran back on the siding next the main line, my mate being at the points. The driver had checked, and I then signalled him to come on back into the brickwork sidings, and drop off some more waggons. As he was coming slowly back, the collision took place. I was at the time standing between the siding and the main line. I had not heard the express approaching, and it was only about four or five waggons lengths from me when I first saw the engine. The train was still running pretty fast, but, I think, was pulling up. Steam was off. I cannot say what was the condition of the brakes. There was no whistling. I think about two of the waggons attached to my engine had entered the siding, but were still foul of the up line. Three waggons were pitched over the embankment, and the other 12 were thrown off the rails, and 14 were damaged. I did not speak to the driver of the express. It was a fine morning. The up home-signal was standing properly at danger, but I did not see the up distant-signal. I had no conversation with the signalman. I knew the express was due at 11.23. The signalman did not tell me he had accepted the train, or tell me to clear the line. I estimate the speed of the express when it struck the waggons at about 15 or 20 miles an hour. Our booked time to leave Castle Cary is 12.25.

James Kerr states: I have been in the service since July 1890, and have been a second guard since November 1891. On the 12th March I was working with Maitland as second guard. While the shunting operations were going on at Castle Cary I was on the up side of the line between the line and the sidings, and only 15 or 20 yards from the signal-box. When the loose waggon was being knocked back I signed to the signalman to put it across on to the down line, and he did so. I had no conversation at all with the signalman, and he never spoke to me, or called out that I heard. I certainly never answered him. He was looking out of his box and I signed to him to put the waggons across, but nothing was said that I heard. I was standing in much the same place when I heard the express coming. My mate at about the same time called out to look out. The engine was then at the east end of the platform. I looked at it. It was running pretty fast. Steam was shut off. I cannot speak exactly as to the state of the brakes, but I thought I heard them. I estimate the speed, when the engine struck the waggons at 15 or 20 miles an hour. I had no conversation with the driver. The up home-signal was showing a proper danger signal, but I did not see the up distant-signal.

James Crosbie states: I have been about 14 years in the service, and a guard for six years. On the 12th instant I came on duty, at Glasgow, at about 10.15 a.m. (a quarter of an hour before I need have come), to work till 10.25 p.m. That is my regular day's work for one week, and in the alternate weeks I work from 12.20 p.m. to 11 p.m. I am off duty on Sundays. I was guard of the 11 a.m. express from Glasgow to Edinburgh, which was made up as follows:—Engine and tender, two third-class, two first-class, one third-class, and one brake-van. It was fitted throughout with the Westinghouse brake, in good order. We started at right time, and had not to stop before getting to Manuel. I have booked the time of the collision as 11.23½. I think we were half a minute behind time. The Dullatur signals were all right when we passed. The Netherwood siding distant was standing off, in its usual position. The next signal was the Castle Cary up distant.

This signal was slightly drooping when I first saw it. I was then two or three carriage lengths from it. I took it for a danger-signal, although it was slightly drooping. We passed it at a speed of between 50 and 60 miles an hour. I went to the other side of the van to look out for the home-signal, but I could not see it on account of the steam. I did not see it until at a point two or three carriage lengths away from it. It was at danger. There was no check of speed between the distant and home signals. I am certain of this. I at once went to apply the Westinghouse brake, but found that the driver had just applied it. There was a pressure of about 70 lbs. on the gauge at Lenzie. I had not looked at it since. The driver, when he did apply it, applied it at full power. We were still running between 50 and 60 miles an hour at the home-signal Speed was greatly checked before the collision took place, but I should say not to less than 25 miles an hour. I was not knocked down or hurt. There were 30 or 40 passengers I should say. Several were injured. The two leading carriages had all wheels off on the six-foot side. The leading wheels of the leading first-class carriage were also off. I spoke to my driver at Glasgow and he was quite fit for duty. I did not speak to my driver after the collision for about three-quarters of an hour. He said the distant-signal was off. Our speed was the usual speed.

Forbes Topp states: I have been 32 years in the service, and a driver for 29 years. I am in the habit of driving between Edinburgh and Glasgow, and know the line perfectly well. On the 12th March I came on duty at Cowlairs at 10.45 a.m., to work till 10.20 p.m. That is my ordinary day's work. I was not on duty the previous day. The engine, No. 601, is an eight-wheeled engine, with leading bogie and driving and trailing wheels coupled, and with a Westinghouse brake working blocks on the four coupled wheels, and the six tender wheels. The brake was in good order. I was attached to the 11 a.m. express which had six vehicles in it, all fitted with the Westinghouse brake. I had a fair run, with signals off, all the way to Castle Cary, and was running to time, and at no more than my usual speed. The first signal after passing Dullatur is Netherwood siding up distant-signal which stands off, as does the Netherwood siding home-signal. The next is the up distant-signal for Castle Cary. The arm of this signal was standing about 3 feet down, and I took it for an all-right signal. I honestly think I was justified in doing so. It was not like a slightly drooping signal. The home-signal at Castle Cary can be first seen just after passing the distant-signal, but the view is hidden by a bridge for a bit, and then it comes into view again at Netherwood siding. I was looking out for it, and saw it was at danger. I was then running at 50 miles an hour with steam on. I shut off steam at once, and applied the Westinghouse brake. It seemed to take a good hold of the train. I had 65 pounds of pressure on the train pipe-gauge, and 80 lbs. on the reservoir gauge. I reversed the engine, and I opened the sand-valves, but I could not pull up the train. The wheels skidded at the end of the platform, and the engine seemed to gather way. I think our speed was 15 miles an hour when my engine struck the side of the waggons. I was not knocked down or hurt, nor was my mate. I did not sound my whistle. I did not see the obstruction on the road until I was at the Glasgow end of the platform. I have never had to make any complaint about the signals at Castle Cary. I am off duty for one day beside Sunday in each week.

James Fleming states: I have been four years in the service, and three years a fireman. On the 12th instant I was fireman with driver Topp. I have heard his evidence and it is correct. I did not see the home-signal myself, but my driver told me it was at danger, and I applied my tender-brake.

Andrew William Stewart, states: I am station-master at Castle Cary, where I have been three months. I have been over 15 years in the service. On the 12th instant I was in front of my house when the collision took place. My house is attached to the station on the down side of the line. I saw the train pass, and knew there would be a collision. The train was running fast, and I do not think the brakes were on. I cannot say if steam was on or off. I knew shunting was going on; at least I knew the goods train had shunting to do. I had been at my house between the time of its arrival and the time the express passed. I would not have allowed shunting on the main line with the express due if I had known of it. When I heard the crash I looked at the signals. Both the home and the distant signals were standing at danger. The distant was drooping, but only very slightly indeed. I went to give assistance, and found that 10 passengers were injured. The carriages were not badly damaged. There were, I believe, 17 waggons on the goods engine when the collision took place. I did not speak to the driver of the express after the accident.

William Bell, states: I am signal-inspector on the North British Railway. I examined the signals at Castle Cary about 3 or 4 p.m. on the 12th instant. They were in proper order. When I saw the up distant-signal at about 2 p.m. it was all right, not drooping at all, and when I tried it it worked all right. We have never had any complaint of this signal, or any trouble with it. The weather that day was not such as to affect the signal wires. There had been slight frost in the night.

Matthew Holmes, locomotive-superintendent of the North British Railway, states: On the 17th instant I tried some experiments with a train made up in the same manner, and with a similar engine to the train to which the accident happened, with one extra vehicle to make up for the weight of the passengers. This train was running at a speed of 60 miles an hour, when the brakes were applied at Castle Cary up distant-signal, and it came to a dead stand in 440 yards. No sand was applied to the rails, and it was a fine day. The brake inspector examined the brakes upon the train which was in collision, and found that they were in perfect working order. I consider it was impossible for this train to have run for anything like 750 yards with the brake applied. The brake-pressure on the experimental train was the same as that upon the passenger train which met with the accident.

Conclusion.

The occurrence of such an accident as this, where, in broad daylight, upon a fine day, a light express train, fitted with a first-class continuous-brake, runs at high speed into a shunting train, upon a line nearly straight and level, should be well-nigh impossible, and can be brought about only by breaches of the rules, and carelessness, on the part of more than one servant of the Company, most descreditable to those concerned.

There is little or no doubt as to the facts of the case, although there are some discrepancies in the evidence.

The 10.40 a.m. down goods train arrived at Castle Cary from Falkirk and Greenhill at 11.11 a.m., considerably before its booked time, and the engine, having first shunted

off three waggons into a down siding, and having to pick up four waggons from the up sidings, was turned on to the up line, the signalman acting in accordance with a signal from the driver, although he says he had no actual knowledge of what work had to be done on the up side.

Some waggons, 18 in number, were then drawn out from the up sidings on to the up main line; the last of these waggons, one of those which the goods train had to pick up, was shunted across on to the down line; the two next waggons, which had to remain at Castle Cary were knocked back into one up siding; and the goods engine was backing the remaining 15 waggons into another up siding, when the express came up and dashed into them, at a speed, which, judging from the evidence, and from the result of the collision, cannot have been much less than 20 miles an hour.

The signalman at Castle Cary, Daniel Donald, who had at the time been on duty for about 5½ hours, admits that upon the express being offered to him by the signalman at Dullatur at 11.17 a.m., he had promptly accepted it, although at the time the up line, immediately in front of his cabin, was occupied by the shunting train of waggons, being led to do so, apparently, by the wish to escape blame for delaying the express, and with the hope that he would be able to clear the up line by getting the goods waggons back into the siding before the express could arrive, the signals of course being locked at danger against this train.

For this action, which was a direct breach of the rule for block working, there can be no valid excuse, and beyond this, it was most imprudent of the signalman to allow the up main line to be occupied at all so short a time before the express was due. He does not appear to be a very reliable man, some of his evidence being clearly incorrect, for he denies that any shunting at all took place on the down line; he declares that the steam on the engine of the express train was not shut off until the collision had taken place, and he recites a conversation which, he alleges, took place between himself and the guard of the goods train, on all of which points he is contradicted by the evidence of the other servants of the Company, and is clearly wrong.

Although, however, the signalman's fault must be held to have been the main cause of this collision, the driver of the express train, Forbes Topp, who had at the time been on duty only for about 40 minutes, was largely responsible for it, for it is impossible to avoid the conclusion, that, if he had been keeping a proper look out, and had made prompt use of the powerful continuous-brake, with which his train was fitted, when the home-signal at danger became visible to him, he might have easily averted the collision by bringing his train to a stand at the home-signal. He was no doubt misled by being allowed to pass Dullatur with "Line clear," but he says further that the up distant-signal arm at Castle Cary was drooping to such an extent that he was justified in considering it to be an all-right signal, and that he applied the continuous-brake, and did all in his power to stop the moment he saw the home-signal to be standing at danger, which, as fixed by him, was at a point 750 yards from the place where the collision occurred. On the first of these points there may be some question, but both the station-master at Castle Cary, and the guard of the express train, while admitting that the distant-signal arm was drooping slightly, have no hesitation in saying that it was in such a position that it ought to have been regarded as a danger-signal. As to the second point there can be no question at all, for it is absurd to suppose that a train, of which more than two-thirds of the weight was braked by a powerful continuous-brake in good order, running at 50 miles an hour upon a nearly level line, with the rails in good order, could have been still running at between 15 and 20 miles an hour, if this brake had been applied for a distance of 750 yards, in half of which distance it ought to have stopped.

Judging from the evidence of the guard and others I am afraid that the fact is that the driver either ran on expecting the home-signal to be lowered for him, or else did not take notice of the state of the home-signal at all, until he was close up to it. It was then too late for him to avert the collision, which would probably have resulted in a terrible catastrophe if the train had run off towards the parapet of the viaduct, instead of into the six-foot way.

This accident should be a warning to drivers, that they must consider neither block-working nor the very best system of signalling, to be an absolute safeguard in itself, but that the one must be taken as a supplement to the other, and just as much care be taken to observe signals as if block-working were not in existence.

In this case the men in fault had not been at work for any great length at time, but it appears from the evidence that the normal hours of work of all the men, signalmen, drivers, and guards, are about 12 hours, which is too long a period for any men to

work continuously, and should be tolerated only where the work is of a very light and intermittent character, with considerable intervals of rest.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) F. A. Marindin,
Major, R.E.

APPENDIX.

Particulars of Damage to Plant.

North British passenger engine No. 601.—Buffer-beams bent; buffer broken; blast-pipe broken; steam-pipes damaged; framing damaged; platforms, plates, angle-irons, and splashers damaged; clock-box and platform-bracket damaged; brake-cylinder, brake-hangers, brake stay-rods, drag-box, cab-pillar and bracket, horn-block covers, sand-valves and foot-steps broken; delivery and injector steam-pipes broken; front, sides, and door of smoke-box broken; bogie-frame damaged; bogie-stay and horn-block broken.

North British first-class carriage No. 226.—Four commode handles destroyed; one axle-box and two buffer-casings broken; one step-board damaged.

North British first-class carriage No. 558.—Five commode and five door handles destroyed; two quarter panels damaged; four door hinges, one axle-box, one door glass, one standing pillar, one step-board, and one headstock damaged and broken.

North British third-class carriage No. 1041.—Two step-boards broken; one step-hanger and two circle-steps damaged; six commode and six door-handles broken; two body glasses broken; headstock broken; four doors and four standing pillars damaged; one axle-box broken; four door hinges, 14 pieces of mouldings and one panel damaged.

North British third-class carriage No. 1,156.—Six commode and six door-handles damaged; one body-glass broken; three standing-pillars, five door-hinges, and two axle-boxes broken; head-stock and step-board damaged.

North British third-class carriage No. 1,225.—Two step-boards and five quarter panels broken; one step-hanger and one circle step damaged; three commode and two door-handles broken; one lamp-iron, one end handle, and two axle-boxes broken; end bar and headstock damaged, one corner pillar, four standing pillars, and four door-pillars damaged.

North British passenger brake-van No. 140.—One projection-glass broken; one projection corner pillar and four projection panels damaged; one step-board damaged.

North British spring-buffered waggons No. 16,939, 30,349, 1,730, 19,571, 22,093, 6,013, 20,446 and 17,210.—Damaged beyond repair.

North British spring buffered-waggon No. 6,351.—Two trams, one headstock, two diagonals, one longitudinal, eight side battens, four end battens, two end pillars, two side sole rails, two axles, four axle-boxes, four guard-plates, three spring shoes, and one brake-casting destroyed.

North British spring-buffered waggon No. 1,893.—One tram, two headstocks, two diagonals, eight side battens, four end battens, two end pillars, one side sole-rail, four axle-boxes, and two axles damaged.

North British spring-buffered waggon No. 48,747.—One slot, two end pillars, four end and three side battens, two uprights, two cross-bars, four guard-plates, four axle-boxes, four spring-shoes, and one brake-casting destroyed; two trams and one head-stock damaged.

North British bogie waggon No. 9,540.—One tram, two end rails, one corner pillar, two buffer-hoops, and one axle destroyed.

North British bogie waggon No. 24,524.—One headstock, two diagonals, two longitudinals, two buffer-clamps, 14 side pillars, three end rails, one end door, two top side rails, one top end rail, six bottom battens, one draw-bar hook, and two corner angle-irons destroyed; top copings, end angle-irons, guard-plate, and brake damaged.

North British open spring-buffered waggon No. 25,685.—One top end and two side battens, end coping, brake-block and shoe, brake-casting, and one corner plate destroyed; four side knees, two side copings, one headstock, and one end pillar damaged.

North British box mineral waggon No. 39,969.—Two end door-rails and two links and studs destroyed; one guard-plate damaged.

Damage to Permanent-Way.

The following materials were rendered useless:—One guard-rail, one guard-chair, three double-chairs, four slide-chairs, 130 common chairs, eight fish-plates, 26 fish-plate bolts, 220 spokes, two connecting-rods, six roller-blocks, three cranks, one barrel-screw, three screw-joints, five double side-pulleys, two double angle-pulleys, 16 sleepers, 120 keys, 100 yards of point-rodding, and 100 yards of signal-wire.

About 43 feet of parapet wall were knocked down.

Printed copies of the above Report were sent to the Company on the 1st June.

SOUTH-EASTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
24th March 1894.

Sir,

I have the honour to report, for the information of the Board of Trade, in compliance with the Order of the 2nd instant, the result of my enquiry into the causes of the collision which occurred on the 22nd ultimo, opposite No. 2 signal-cabin, Cannon Street Bridge, on the South-Eastern Railway.

In this case as the 8.45 a.m. up passenger train from Hastings, due to leave Cannon Street for Charing Cross at 10.28 a.m. was proceeding from Cannon Street to Charing Cross the third vehicle from the rear was run into, at the junction of Nos. 4 and 8 lines, by the engine of the 10.21 a.m. passenger train from Charing Cross for Dover, due to leave Cannon Street at 10.34 a.m., when on its way from Cannon Street to London Bridge.

One passenger in the Dover train has complained of being shaken.

In the Hastings train, which consisted of a tender-engine, running tender in front, and seven vehicles fitted throughout with the automatic vacuum-brake, a composite-carriage, third-class carriage, and brake-van had their right sides damaged, but no wheels left the rails.

In the Dover train, which consisted of a tender-engine, running engine in front, and six vehicles fitted throughout with the automatic vacuum-brake, no damage was sustained, but all the wheels of the engine and the leading wheels of the tender left the rails at the point of a V crossing opposite to the fouling point of the lines on which the trains were running.

Description.

The junction of the two outgoing main lines from Cannon Street takes place nearly opposite to the north end of No. 2 signal-cabin, which is at the south side of Cannon Street Bridge. Immediately after the junction the line again divides into two, the left-hand line going to London Bridge, and the right-hand line to Charing Cross. The junction is protected by four outgoing home-signals placed on a bracketed post 12 yards short of the fouling point of the two outgoing lines, the two top arms referring to the London Bridge line and the two lower arms to the Charing Cross line, there being four distant-signals for the next cabins in advance below the home-signals and controlled by them. The next signals towards the station are the advanced signals of No. 1, the station-cabin. These signals are about 95 yards from the junction home-signals and were originally controlled as distant-signals from No. 2 cabin; but on September 3rd, in accordance with a circular previously issued, the control of the advanced signals for the east line was removed from No. 2 cabin, and thus so far as that line is concerned the junction has, since September 3rd, been protected by home-signals only, it being possible for a driver on this line to find one of the advanced-signals off and one of the home-signals, only 95 yards beyond them, at danger, this having been the case when the present collision occurred. The view of the junction home-signals is fair, and they can be seen by a driver on the east line for more than 100 yards. Block system is not in force on Cannon Street Bridge, it having been, in consequence of the nature of the traffic, specially exempted.

Evidence.

1. *John Murphy*, signalman; 37 years' service, signalman 32 years.—I have been stationed in No. 2 cabin, Cannon Street, since September 1891, and I came on duty there at 6 a.m. on 23rd February for eight hours. Trains from the station are described from No. 1 cabin, and also rung on. Absolute block work is not in force as regards the convergence of Nos. 4 and 8 lines, where trains on either line are allowed to approach the signals together. The up Hastings and down Dover trains were both rung on from No. 1 at the same time, viz., 10.33 a.m., the up Hastings train being rather the first, and I decided to let it go first. I accordingly lowered No. 24 and No. 26 signals for it, No. 24 being the advanced-signal of No. 1 cabin, which I control. I lowered no signal at all for the Dover train, which required the top arm on the post to the left of No. 26 (a lower arm), but I have no control over the advanced starting-signal from No. 5 platform to No. 8 line, which is entirely in the hands of No. 1 cabin. I saw the trains coming past No. 1 box, the Hastings train being in front. I saw them as far as the advanced signals, and then turned to other duties, and did not see them again till they were in collision just in advance of Nos. 26 and 29 signals. The engine of the Dover train struck the Hastings train near its rear, but threw off no vehicles; the engine of the Dover train was thrown off the rails to the left. I am not certain as to the tender, but no vehicles in this train were off the rails. The collision occurred at 10.35 a.m. It is a common thing for two trains to approach these signals together. I heard no alarm-whistle before the collision, but there were engines blowing off steam. I used to work the slots on the advance starting-signals for the east line &c., but I think the slots were taken off, as they were found to be too great an obstruction to the traffic.

2. *George Richards*, driver; 30 years' service, 25 years driver.—On 23rd February I signed on at 7.30 a.m., to sign off at 6.30 p.m. After some previous work I joined the 8.45 a.m. up Hastings train at Cannon Street, to take it to Charing Cross. I started at 10.33 a.m., my engine being a tender-engine running tender first, and the train consisting of seven vehicles. The train was fitted throughout with the automatic vacuum-brake, there being a brake-van, with a guard at the rear of the train. I started from No. 3 platform with the starting-signal, advance-signal (the one on the left), and the lower two signals on the right-hand post at No. 2 cabin (the upper two referring to London Bridge) off. I saw nothing of the Dover train which was behind me on No. 8 line.

My engine had passed through the facing-points leading to Charing Cross, and was running at a speed of 15 miles an hour, when I felt as if the brake had gone on, but looking at the gauge and finding it showing 20 inches (the running pressure) I asked the fireman to look back on the right, and he said the train was coming all right, and directly after this the brake was put on by one of the guards—I think the rear one. I at once shut off steam, and the train stopped with the last vehicle clear of the junction crossings. I thought I saw the hind guard jump out after we had stopped. No part of my train was knocked off the rails, but the three or four vehicles had to be disconnected, as they were damaged. I cannot account for the mistake made by the driver of the Dover train, except that he was more accustomed to run on the road I was running on, viz., No. 4. The signals at No. 2 cabin are visible before reaching the advanced-signals, and can be better seen from No. 4 than from No. 8 line.

3. *Isaac Claringbowl*, guard; 16 years' service, 14 years guard.—On February 23rd I was guard of the 8.45 a.m. up Hastings train, having commenced work at 8.30 a.m. to remain till 7.30 p.m. We reached Cannon Street at 10.30 a.m., five minutes late, and started out at 10.33 a.m., the train consisting of engine and tender, brake-van, third-class bogie composite, third-class bogie composite, two third-class, and one brake-van, seven vehicles in all. The automatic vacuum-brake was on the train, and I could apply it from the rear brake-van, in which I was riding. The signals were all off for my train. I saw the home-signal at No. 2 box before passing the advanced-signal, and it was then off. I first noticed the Dover train about the advanced-signal; it was running on No. 8 line, and when the engine of that train was about passing No. 2 cabin stop-signals and was about opposite to the centre of my train, I thought, as steam appeared to be on, that it would run into us. On seeing that a collision was imminent I jumped out on the right-hand side, having no time to apply the brake, and went down on my hands, the speed of my train being 10 miles an hour, and the speed of the other train being about the same. The collision must have occurred at about the time I jumped. When my train stopped the rear van was four or five yards clear of the junction crossings. No vehicles were off the rails, but the three rear ones were damaged on the left side. I believe my mate put the brake on on seeing me on the ballast. I did not speak to the driver of the Dover train. I know of no reason for his making the mistake he did. I saw no one hurt in my train, and no one complained.

4. *Robert H. Wood*, guard; 17 years' service, eight years guard.—On 23rd February I commenced work at 8.30 a.m., to sign off at 9.7 p.m., with 4½ hours off duty in London, from 11 to 3.30. I was one of the guards of the 8.45 a.m. up Hastings train, and from Cannon Street I was in the brake-van next the engine, from which I could apply the continuous-brake. I found the signals all off, and saw No. 2 cabin home-signal off when passing No. 1. I saw also the advanced-signal of No. 1 cabin off for the Dover train, the engine of which was about the centre of my train, when nearing No. 2 cabin signals; but my train was going rather faster than the Dover train. On coming to the crossings I was looking back watching the Dover train, and thinking it was coming rather too fast to stop at the signals, when my van was passing No. 2 signals, I shouted out to the driver of the Dover engine, which was about a van and carriage length from the signals. I did not see any result from the shout, nor did I see the collision take place, as the curve cut off the view. I then saw the Dover engine leaning over to the left, I ran across and looked out at the off-side window, and seeing the train was coming all right and the rear brake-van door open, I put on the vacuum-brake and stopped the train, the rear brake being a short distance clear of the junction-crossings. I did not hear any complaint, nor did I see any one hurt. The speed on collision was about 10 miles an hour. I have no idea as to what caused the driver of the Dover train to make the mistake he did.

5. *George Taylor*, guard; 28 years' service, 23 years guard.—On 23rd February I commenced work at 8.30 a.m., to finish at 7.30 p.m. I was guard of the 10.21 a.m. train from Charing Cross for Dover, and from Cannon Street it consisted of engine, tender, third-class, first-class, second-class, third-class, and two brake-vans. I was in the last but one, the fifth vehicle. I was the only guard. There was a continuous-brake on the whole train, and I could apply it from my van. We left Cannon Street punctually at 10.34 a.m. from No. 5 platform, got the starting-signal for No. 8 line, but I did not see the advanced-signal, viz., the centre one of the three, on account of steam and smoke from my engine. The next signal was that worked from No. 2 cabin, viz., the top signal on the left-hand post. This signal was hidden as we approached it from the steam and smoke of my engine, and I did not see it till the engine had passed it, when it was at danger and the engine off the rails. The collision took me unawares, as I had seen nothing of the Hastings train, as I was not looking out on the right-hand side. I felt no check to the speed of my train, and no brake-whistle before the collision. The brake was applied just as the collision occurred, as I found the gauge at zero when I went to put it on. No vehicles were off the rails in my train, and no damage done. We were going very slowly when the collision occurred. My driver said he did not see the signal on account of steam. I saw no one hurt, and heard no complaints. The collision occurred at about 10.35 a.m. I was alone in the van.

6. *James E. Weller*, driver; 24 year's service, 15 years driver.—On February 23rd, I commenced work at 4.30 a.m. to sign off at Dover at 3 p.m. I was driver of the 10.21 a.m. train from Charing Cross for Cannon Street and Dover, and joined the train at Cannon Street, which we left punctually at 10.34 a.m. My engine was an 8-wheeled engine, with a 4-wheeled leading bogie, and four rear wheels coupled and a 6-wheeled tender, and the train consisted of four carriages and two vans. The train was fitted throughout with the automatic vacuum-brake, applying to the coupled wheels of the engine, all the tender wheels and four wheels of each of the vehicles. We started from No. 5 platform line, and got the starting-signal for No. 8 line and the middle advanced-signal for this line, these being both off a minute before I started. I have never before known the advanced-signal to be lowered before starting from the platform and the stop-signal at the No. 2 cabin to be at danger, but I have often drawn out of the station to the advanced-signal which has then been lowered to allow of the train drawing up to the signals of No. 2 cabin. From the right side of the engine, my side, it is possible to see No. 2 cabin signals, when passing the advanced-signal of No. 1 cabin, but on this occasion, owing to steam hanging about the signals, I was unable to see them until I got to the engine road cabin about 30 yards from the signals, and then saw that the one I wanted, viz., the top left-hand signal, was at danger, and I did not see any other off in this group. When I saw this signal at danger my speed was about 10 miles an hour, and I immediately shut off steam and applied the vacuum-brake, the pressure being 18 inches, but had not quite stopped when I struck the fourth vehicle from the rear of the Hastings train, the speed of which was probably 15 miles an hour. My engine left the rails, one of the left wheels striking the point of a diamond crossing, and all the engine wheels went off the rails and also the leading wheels of the tender; the front of the engine, when it stopped, was 25 yards

beyond the signal, the fouling point having been 12 yards beyond it. Neither I nor the fireman jumped. Neither of us was hurt. I had seen nothing of the Hastings train till I was in the act of stopping as up to this time I had been looking to the left for the signal. I had not seen the train leave the station. Some time since a notice was issued stating that the slots on the advanced-signals of No. 1 cabin were removed from No. 2 cabin, and that the advanced-signals were in the hands only of No. 1 cabin. The fireman was firing on passing No. 1 cabin and then looked out, but could not see No. 2 cabin-signals any more than myself. I had heard a shout, just after I had shut off steam, and thought it came from some one on the ground on the left.

7. *George Knott*, fireman; five years' service, six months fireman.—I have been Weller's fireman all the time and was with him on February 23rd, my hours being the same as his. My place was on the left-hand side of the foot-plate. When we started from No. 5 road at Cannon Street, I saw that the starting and advanced-signals were off; directly after starting I raked the fire and had finished doing so before passing the advanced-signal; I then looked for the top left-hand signal at No. 2 cabin, but I could not see it for steam and smoke till we had passed it, when I saw it was at danger. I had heard a shout about half way between the advanced-signal and it, but still could not see it, but I thought my mate had, or I should have spoken. I did not see where steam was shut off or the brake applied, but I felt the brake go on about half way between the two signals, the speed being then eight to ten miles an hour. I did not jump before the collision and was not hurt. I saw nothing of the Hastings train before we struck it.

Conclusion.

This collision between two passenger trains was caused by neglect of duty on the part of James E. Weller and George Knott, the driver and fireman of the train for Dover, in not seeing that the junction home-signal for their train to proceed towards London Bridge was lowered before allowing their train to foul the junction of this line with the other outgoing line, on which the train from Hastings for Charing Cross was running with the junction-signal lowered for it. Weller states that he was unable to see the junction-signal as he was approaching it—in consequence of steam from the engine of the Hastings train being blown across his view of it—until he was within about 30 yards of the signal, too late to stop his train (the speed of which was about 10 miles an hour), though he used every possible means to do so before his engine came into collision with the left side of the fourth vehicle from the rear of the Hastings train, and then with the left sides of the three vehicles behind it, but not throwing any of them off the rails. The left wheels of the engine itself stood on the wrong side of the points of a crossing, and all the engine wheels and the leading wheels of the tender were thrown off the rails, the front of the engine stopping about 25 yards beyond the signals or about 13 yards from the point of the collision. Weller adds that he had seen nothing of the Hastings train, which was on his right, till he was in the act of stopping, as his attention had been up to that time fixed on the signals which were on his left. He acknowledges having seen the circular acquainting drivers and others that from September 3rd last one of the advanced-signals of No. 1 cabin for the east road might be found off, but the junction home-signal at danger, and that he ought to have made sure that the latter was lowered for his train before venturing to foul the junction. He says, however, that in his experience he had never before known the advanced-signal to be lowered before starting from the platform (as it was on the present occasion), and the junction home-signal at No. 2 cabin at danger, though he has frequently drawn out of the station to the advanced-signals, one of which has then been lowered to allow him to proceed to the junction home-signals.

Weller is a man of very good character, and of 15 years' service as driver. He had commenced work on February 23rd at 4.30 a.m. to remain till 3 p.m., and had therefore been on duty about six hours when the collision occurred.

Knott, who had acted as Weller's fireman for the past six months, saw that the starting and advanced signals were off for his train before it started. Directly after starting he had raked the fire and had finished doing so before passing the advanced-signal. He states that he then looked out for the junction home-signal of No. 2 cabin, but could not see it owing to steam and smoke till he had passed it, and then saw that it was at danger; that he had heard a shout about half way between the advanced-signal and the junction-signals, but concluding that Weller had also heard it, he did not call his attention to it. He felt Weller apply the brake directly after the shout, when the speed was about 10 miles an hour. He had seen nothing of the Hastings train before the collision.

Knott, whose place was on the left side of the foot-plate and who was therefore in a better position than Weller for seeing the junction-home signal, must share Weller's blame for not having made sure of its indication before fouling the junction. He is a man of five years' service and his hours on the 23rd February were the same as Weller's.

Taylor, the only guard of the Dover train, riding in the fifth vehicle, the last but one, saw that the starting-signal was off before the train started, but on account of steam

and smoke failed to see either the advanced-signal or the junction home-signal at No. 2 cabin. He was taken unawares by the collision and had seen nothing of the Hastings train before it occurred, as he was not looking out on the right of his van. He describes the speed as very slow just before the collision, and says that Weller told him he had not seen the junction-signal owing to its being obscured by steam.

No blame is to be attached to the servants in charge of the Hastings train for which the signals were all duly lowered, and which started from Cannon Street at 10.35 p.m., five minutes late. The driver was in advance of the Dover train, and had seen nothing of it; but as his engine was passing through the facing-points leading to Charing Cross he felt a drag on his train, and immediately afterwards the continuous-brake applied by one of the guards. He then at once shut off steam, the speed having been about 15 miles an hour, and his train was stopped with the last vehicle clear of the junction crossings, without any wheels being off the rails.

The front guard, riding in the brake compartment next the engine, noticed, when nearing the junction-signals, the engine of the Dover train about opposite the centre of his own train which was moving rather faster than the other. On looking back, on the near-side, as he was passing the junction-signals, he thought the driver of the Dover train was coming too fast, and shouted to him, immediately after which the collision too place. He then looked back on the off-side, and seeing that his train was coming forward all right, but that the rear brake-van door was open, he applied the continuous-brake, which stopped his train just clear of the junction.

The rear guard, riding in the rear brake-van, first noticed the Dover train about the advanced-signals, and noticed it again when the engine of that train was about passing the junction-signals, and was about opposite the centre of his own train, the speed of each train being about the same, 10 miles an hour; he thought, as steam appeared to be still on the engine of the Dover train, that a collision was imminent, and jumped from his van on the off side and fell down on his hands, having had no time to apply the continuous-brake before he jumped.

The signalman on duty in No. 2 cabin, who had his signals lowered for the Hastings train, observed the two trains approach as far as the advanced-signals, the Hastings train being ahead of the other. He had then to attend to other duties, and did not see them again till they were in collision, a short distance in advance of the junction-signals. He stated that it was a common thing for two trains to approach the junction simultaneously.

While attributing the main cause of this collision to want of due caution on the part of driver Weller and his fireman, Knott, in approaching the junction-signals of No. 2 cabin, although the fact of finding a signal—only 95 yards from these signals—off was no doubt most misleading; the Company are, I think, greatly in fault in having removed the control of the advanced-signals of No. 1 cabin, (which control existed when the signal arrangements at No. 2 cabin were inspected in September 1891) for No. 8 line from the hands of the signalman in No. 2 cabin, thus leaving the junction, between Nos. 4 and 8 lines on which the two trains were approaching the junction, without any protection, as regards No. 8 line, save that of the home-signals, 12 yards short of the fouling-point. It had been found that the control of the advanced-signals from No. 2 cabin was a great impediment to the traffic, and on September 3rd the control was removed without any equivalent protection having been provided.

A proceeding of this kind tends to render the inspections of signal arrangements by the Board of Trade a mere farce. Had the Company, on finding that the control of the advanced signals for No. 8 line from No. 2 cabin was too great an impediment to the traffic, asked the Board of Trade to have the signal arrangements again inspected with a view to see what relief, consistent with a due regard to safety, could be afforded, a way out of the difficulty would no doubt have been found without the Company placing themselves in the awkward position of improperly altering arrangements which had been inspected and approved of by the Board of Trade.

No time should now be lost either in restoring the control of these advanced-signals to No. 2 cabin, or in arranging some other means of providing the junction with an equivalent for this control.

I have, &c.,

C. S. Hutchinson,

Major-General, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

Printed copies of the above Report were sent to the Company on the 17th April.

RETURNS

OF

ACCIDENTS AND CASUALTIES

AS REPORTED TO THE BOARD OF TRADE BY THE SEVERAL RAILWAY COMPANIES IN THE UNITED KINGDOM,

During the Six Months ending 30th June 1894,

In pursuance of the Regulation of Railways Act (1871), 34 & 35 Vict. cap. 78;

TOGETHER WITH

REPORTS OF THE INSPECTING OFFICERS OF THE RAILWAY DEPARTMENT TO THE BOARD OF TRADE

UPON

CERTAIN ACCIDENTS

Which were inquired into.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

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TABLE OF CONTENTS.

Page

SUMMARY of ACCIDENTS and CASUALTIES reported to the BOARD of TRADE during the Six Months ending 30th June 1894 - - - - - - - 3

TABLES:

No. 1. General Total.—Number of Persons reported as killed or injured on the Railways of the United Kingdom, distinguishing between Passengers, Servants of the Companies or of Contractors, and other Persons; and distinguishing also in the case of the two former Classes between Accidents caused by accidents to trains, rolling-stock, permanent-way, &c., and Accidents happening otherwise - - - - - - - - - 7

No. 2. Number of Persons reported as killed or injured in the United Kingdom, by the travelling of trains or the movement of vehicles used exclusively upon Railways, distinguishing between Passengers, Servants of Railway Companies, and other Persons; and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - 8

No. 3. Accidents to Trains, Rolling-Stock, Permanent-Way, &c. on the Railways in the United Kingdom, distinguishing the different Classes of Accidents, and the Number of Passengers and others, and of Servants of Railway Companies, killed or injured in each Class of Accident - 9

No. 4. Accidents to Trains, Rolling-Stock, Permanent-Way, &c. on the Railways in the United Kingdom, distinguishing the different Classes of Accidents, the different Railways on which the same have occurred, and the Number of Passengers and others, and of Servants of Railway Companies, killed or injured on each Railway by those Accidents - - - - 10

No. 5. Number of Servants of Railway Companies and Contractors reported as killed or injured on the Railways in the United Kingdom, by the travelling of trains or the movement of vehicles used exclusively upon Railways, distinguishing the Number which have occurred on each Railway or System of Railway, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - - - - - 14

No. 6. Table showing the different occupations of Servants of Railway Companies and Contractors who were killed or injured, and classifying their injuries as far as practicable - 18

No. 7. Number of Persons reported as having been killed or injured whilst upon the Companies' premises, by accidents in which the movement of vehicles used exclusively upon Railways was not concerned, distinguishing between Passengers, Servants of Companies, and other Persons; and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury - - - - - - - - - 19

REPORTS ON ACCIDENTS INQUIRED INTO - - - - - - - 21

Summary of Accidents and Casualties which have been reported to the Board of Trade as having occurred upon the Railways in the United Kingdom during the Six Months ending 30th June 1894.

I.—Accidents to Trains, Rolling-Stock, Permanent-Way, &c.

Accidents to trains, rolling-stock, permanent-way, &c. caused the death of 2 persons and injury to 100 persons, viz. :—

	Killed.	Injured.	*Total for the corresponding Period in 1893.*	
			Killed.	*Injured.*
Passengers - - - - - -	—	73	*1*	*202*
Servants of companies - - - - -	2	27	*5*	*33*
Total - - - -	2	100	*6*	*235*

During the six months there were reported 9 collisions between passenger trains or parts of passenger trains, by which 21 passengers and 1 servant were injured; 11 collisions between passenger trains and goods or mineral trains, &c., by which 42 passengers and 11 servants were injured; 6 collisions between goods trains or parts of goods trains, by which 3 passengers and 6 servants were injured; 19 cases of passenger trains or parts of passenger trains leaving the rails, by which 1 servant was injured; 4 cases of goods trains or parts of goods trains leaving the rails, by which 3 servants were injured; 5 cases of trains running into stations or sidings at too high a speed, by which 4 passengers were injured; 61 cases of trains running over cattle* or other obstructions on the line, by which 1 passenger and 1 servant were injured; 6 cases of the failure of machinery, springs, &c., of engines, by which 1 servant was killed and 2 were injured; 2 failures of wheels, by which 1 passenger was injured; 86 failures of axles, by which 1 servant was injured; and 5 failures of couplings, by which 1 servant was killed, and 1 passenger and 1 servant were injured.

The following cases were also reported, but they involved no personal injury:—16 cases of trains running through gates at level crossings; 1 case of the bursting of boilers or tubes, &c., of engines; 213 failures of tyres; 2 failures of ropes used in working inclines; 1 failure of a tunnel, &c.; 132 failures of rails; 5 slips in cuttings or embankments; 4 fires at stations; and 1 other accident.

Of the 213 tyres which failed, 6 were engine-tyres, 7 were tender-tyres, 1 was a coach-tyre, 9 were van-tyres, and 190 were waggon-tyres; of the waggons, 161 belonged to owners other than the Railway Companies; 152 tyres were made of iron, 60 of steel, and in 1 case the material was not stated; 3 of the tyres were fastened to the wheel by Gibson's patent method; 2 by Mansell's patent method; 190 by bolts or rivets, 2 of which left their wheels when they failed; 17 by other methods, 1 of which left the wheel when it failed; 21 tyres broke at rivet-holes, 56 in the solid, and 136 split longitudinally or bulged.

Of the 86 axles which failed, 52 were engine axles, viz., 44 crank or driving, and 8 leading or trailing; 8 were tender axles, 1 was a coach axle, and 25 were waggon axles, one of which was a salt-van; of the waggons, 12 belonged to owners other than the Railway Companies. Of the 44 crank or driving axles, 14 were made of iron and 30 of steel. The average mileage of 13 crank or driving axles made of iron was 262,795 miles, and of 29 crank or driving axles made of steel 260,299 miles.

* During the six months, 11 horses, 19 beasts and cows, and 18 sheep were run over and killed, and 3 horses, 2 beasts, and 2 sheep were injured.

Of the 132 rails which broke, 37 were double-headed, 74 were single-headed, 8 were of the bridge pattern, and 13 were Vignoles' rails; of the double-headed rails 18 had been turned; 5 rails were made of iron and 127 of steel.

II.—Accidents to Passengers from Causes other than Accidents to Trains, Rolling-Stock, Permanent-Way, &c., including Accidents from their own want of Caution or Misconduct; Accidents to Persons passing over Level-Crossings; Trespassers; and Others.

Of the 289 persons killed and 473 injured in this division, 50 of the killed and 368 of the injured were passengers. Of these 12 were killed and 25 injured by falling between carriages and platforms, viz., 10 killed and 13 injured when getting into, and 2 killed and 12 injured when alighting from, trains; 7 were killed and 217 injured by falling on to platforms, ballast, &c., viz., 37 injured when getting into, and 7 killed and 180 injured when alighting from, trains; 14 were killed and 6 injured whilst passing over the line at stations; 53 injured by the closing of carriage doors; 9 were killed and 17 injured by falling out of carriages during the travelling of trains; and 8 were killed and 50 injured from other causes. 29 persons were killed and 8 injured whilst passing over railways at level-crossings, viz., 13 killed and 5 injured at public level-crossings, 5 killed and 1 injured at occupation-crossings, and 11 killed and 2 injured at foot-crossings. 125 persons were killed and 67 injured when trespassing on the railways; 62 persons committed suicide on railways; and of other persons not specifically classed, but mostly private people having business on the companies' premises, 23 were killed and 30 injured.

III.—Accidents to Servants in the Employ of Railway Companies or Contractors, caused by the Travelling of Trains or the Movement of Vehicles used exclusively upon Railways.

During the six months there were 244 servants of companies or contractors reported as having been killed and 1,275 injured, in addition to those included in Division I. Of these 11 were killed and 144 injured whilst coupling or uncoupling vehicles; 1 was killed and 4 injured by coming in contact, whilst riding on vehicles during shunting, with other vehicles, &c. standing on adjacent lines; 9 were injured whilst passing over or standing upon buffers during shunting; 6 were killed and 99 injured in getting on or off, or by falling off engines, waggons, &c. during shunting; 2 were killed and 81 injured whilst braking, spragging, or chocking wheels; 1 was killed and 10 injured whilst attending to ground-points, marshalling trains, &c.; 11 were killed and 145 injured whilst moving vehicles by capstans, turntables, props, &c. during shunting, and 48 were killed and 244 injured by various other accidents during shunting operations; 3 were killed and 32 injured by falling off engines, &c. during the travelling of trains; 2 were killed and 25 injured by coming in contact with over-bridges or erections on the sides of the line during the travelling of trains; 7 were killed and 42 injured whilst getting on or off engines, vans, &c. during the travelling of trains; 1 was killed and 181 injured whilst attending to, or by the failure of, machinery, &c. of engines in steam; 35 were killed and 44 injured whilst working on the permanent-way, sidings, &c.; 3 were killed whilst attending to level-crossing gates; 81 were killed and 94 injured whilst walking, crossing, or standing on the line on duty; 4 were killed and 32 injured by being caught between vehicles; 7 werekilled and 20 injured by falling or being caught between trains and platforms, walls, &c.; 13 were killed and 4 injured whilst walking, &c. on the line on the way home or to work; and 8 were killed and 65 injured from various other causes.

Altogether, the number of persons killed and injured on railways in the United Kingdom in the course of public traffic, during the six months ending 30th June 1894, as reported to the Board of Trade, was as follows :—

	Killed.	Injured.	*Total for the corresponding Period in 1893.*		Increase.		Decrease.	
			Killed.	*Injured.*	Killed.	Injured.	Killed.	Injured.
Passengers:								
From accidents to trains, rolling-stock, permanent-way, &c.	—	73	*1*	*202*	—	—	1	129
By accidents from other causes -	50	368	*42*	*331*	8	37	—	—
Servants of companies or contractors :*								
From accidents to trains, rolling-stock, permanent-way, &c.	2	27	*5*	*33*	—	—	3	6
By accidents from other causes -	244	1,275	*221*	*1,295*	23	—	—	20
Persons passing over railways at level-crossings.	29	8	*25*	*12*	4	—	—	4
Trespassers (including suicides) - -	187	67	*163*	*71*	24	—	—	4
Other persons not coming in above classification.	23	30	*16*	*41*	7	—	—	11
Total - - - -	535	1,848	*473*	*1,985*	62	—	—	137

* Of contractors' servants 10 were killed and 6 injured.

Note.—In addition to the above, the Railway Companies have reported to the Board of Trade, in pursuance of the 6th Section of the Regulation of Railways Act, 1871, the following accidents which occurred upon their premises, but in which the movement of vehicles used exclusively upon railways was not concerned, namely:—2 passengers killed and 69 injured whilst ascending or descending steps at stations; 17 injured by being struck by barrows, falling over packages, &c. on station platforms; 15 injured by falling off platforms; and 1 killed and 34 injured from other causes. Of servants of companies or contractors, 4 killed and 626 injured whilst loading, unloading, or sheeting waggons; 2 killed and 138 injured whilst moving or carrying goods in warehouses, &c.; 47 injured whilst working at cranes or capstans; 1 killed and 117 injured by the falling of waggon-doors, lamps, bales of goods, &c.; 1 killed and 121 injured by falling off, or when getting on or off, stationary engines or vehicles; 9 killed and 191 injured by falling off platforms, ladders, scaffolds, &c.; 150 injured by stumbling whilst walking on the line or platforms; 91 injured whilst attending to stationary engines in sheds; 25 injured by being trampled on or kicked by horses; 2 killed and 274 injured whilst working on the line or in sidings; and 6 killed and 215 injured from various other causes. Of other persons, most of whom were transacting business on the companies' premises, 7 were killed and 87 injured—making a total in this class of accidents of 35 persons killed and 2,226 injured.

Thus the total number of personal accidents reported to the Board of Trade by the several Railway Companies during the three months amounts to 570 persons killed and 4,074 injured.

TABLE No. 1.

GENERAL TOTAL.

NUMBER of PERSONS reported, during the Six Months ending 30th June 1894, as KILLED or INJURED on the RAILWAYS of the UNITED KINGDOM, distinguishing between PASSENGERS, SERVANTS of the COMPANIES or of CONTRACTORS, and OTHER PERSONS; and distinguishing also in the case of the Two former Classes between ACCIDENTS caused by ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c., and ACCIDENTS happening otherwise.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, rolling-stock, permanent-way, &c. -	–	61	–	12	–	–	–	73
By accidents from other causes, including accidents from their own want of caution or misconduct - - -	34	348	13	19	3	1	50	368
SERVANTS:—								
From accidents to trains, rolling-stock, permanent-way, &c. -	1	24	1	3	–	–	2	27
By accidents from other causes, including accidents from their own want of caution or misconduct - - -	202	1,135	33	128	9	12	244	1,275
OTHER PERSONS:—								
Whilst passing over railways at level-crossings - -	27	8	1	–	1	–	29	8
Trespassers - - -	81	53	40	12	4	2	125	67
Suicides - - - -	49	–	11	–	2	–	62	–
Miscellaneous, not included in either of the above - -	20	24	1	5	2	1	23	30
TOTAL - -	414	1,653	100	179	21	16	535	1,848

N.B.—The Board of Trade state the cause of accident as returned by the Companies, but do not guarantee or otherwise adopt the statement, except in cases where an official inquiry has been held.

TABLE No. 2.

NUMBER of PERSONS reported, during the Six Months ending 30th June 1894, as KILLED or INJURED in the UNITED KINGDOM by the TRAVELLING of TRAINS or the MOVEMENT of VEHICLES used exclusively upon RAILWAYS, distinguishing between PASSENGERS, SERVANTS of RAILWAY COMPANIES, and OTHER PERSONS, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, &c., *see Table No. 3*	–	61	–	12	–	–	–	73
From falling between trains and platforms	10	23	2	2	–	–	12	25
From falling on to the platform, ballast, &c. when getting into or out of trains	4	208	3	9	–	–	7	217
Whilst crossing the line at stations	13	6	–	–	1	–	14	6
By the closing of carriage doors	–	51	–	2	–	–	–	53
From falling out of carriages during the travelling of trains	3	14	5	3	1	–	9	17
By other accidents	4	46	3	3	1	1	8	50
TOTAL	34	409	13	31	3	1	50	441
SERVANTS:—								
From accidents to trains, &c., *see Table No. 3*	1	24	1	3	–	–	2	27
Whilst coupling or uncoupling vehicles	8	129	2	14	1	1	11	144
By coming in contact, whilst riding on vehicles during shunting, with other vehicles, &c. standing on adjacent lines	1	3	–	1	–	–	1	4
Whilst passing over or standing upon buffers during shunting	–	4	–	4	–	1	–	9
When getting on or off, or falling off, engines, waggons, &c. during shunting	4	87	2	10	–	2	6	99
Whilst braking, spragging, or chocking wheels	1	68	1	13	–	–	2	81
Whilst attending to ground-points, marshalling trains, &c.	1	10	–	–	–	–	1	10
Whilst moving vehicles by capstans, turn-tables, props, &c. during shunting	8	137	3	6	–	2	11	145
By other accidents during shunting operations, not included in the preceding	37	219	6	23	5	2	48	244
From falling off engines, &c. during the travelling of trains	1	25	1	7	1	–	3	32
By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains	2	15	–	10	–	–	2	25
When getting on or off engines, vans, &c. during the travelling of trains	4	37	1	4	2	1	7	42
Whilst attending to, or by the failure of, machinery, &c. of engines in steam	1	171	–	10	–	–	1	181
Whilst working on the permanent-way, sidings, &c.	30	33	5	10	–	1	35	44
Whilst attending to gates at level-crossings	2	–	1	–	–	–	3	–
Whilst walking, crossing, or standing on the line on duty	74	84	7	9	–	1	81	94
From being caught between vehicles	3	31	1	1	–	–	4	32
From falling or being caught between trains and platforms, walls, &c.	7	17	–	3	–	–	7	20
Whilst walking, &c. along the line on the way home or to work	13	3	–	1	–	–	13	4
Miscellaneous	5	62	3	2	–	1	8	65
TOTAL	203	1,159	34	131	9	12	246	1,302
OTHER PERSONS:—								
Whilst passing over railways at level-crossings	27	8	1	–	1	–	29	8
Trespassers	81	53	40	12	4	2	125	67
Suicides	49	–	11	–	2	–	62	–
Miscellaneous	20	24	1	5	2	1	23	30
TOTAL	177	85	53	17	9	3	239	105
SUMMARY:—								
Passengers	34	409	13	31	3	1	50	441
Servants	203	1,159	34	131	9	12	246	1,302
Other persons	177	85	53	17	9	3	239	105
TOTAL ALL CLASSES	414	1,653	100	179	21	16	535	1,848

TABLE No. 3.

ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c. reported, during the Six Months ending 30th June 18[illegible] as having occurred on the RAILWAYS in the UNITED KINGDOM, distinguishing the different Classes of Accident, and th[illegible] Number of Passengers and others, and of Servants of Railway Companies, KILLED or INJURED in each Class of Accident.

—	NUMBER OF CASES.				NUMBER OF PASSENGERS AND OTHERS.								NUMBER OF SERVANTS.							
	England and Wales.	Scotland.	Ireland.	United Kingdom.	England and Wales.		Scotland.		Ireland.		United Kingdom.		England and Wales.		Scotland.		Ireland.		United Kingdom	
					Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions between passenger trains or parts of passenger trains	9	–	–	9	–	21	–	–	–	–	–	21	–	1	–	–	–	–	–	1
Collisions between passenger trains and goods or mineral trains, engines, and vehicles standing foul of the line	8	2	1	11	–	31	–	11	–	–	–	42	–	9	–	2	–	–	–	11
Collisions between goods trains or parts of goods trains	6	–	–	6	–	3	–	–	–	–	–	3	–	6	–	–	–	–	–	6
Trains coming in contact with projections from other trains travelling on parallel lines	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Passenger trains or parts of passenger trains leaving the rails	13	2	4	19	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Goods trains or parts of goods trains, engines, &c. leaving the rails	4	–	–	4	–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	3
Trains or engines travelling in the wrong direction through points	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Trains running into stations or sidings at too high a speed	4	–	1	5	–	4	–	–	–	–	–	4	–	–	–	–	–	–	–	–
Trains running over cattle or other obstructions on the line	43	15	3	61	–	1	–	–	–	–	–	1	–	–	–	1	–	–	–	1
Trains running through gates at level-crossings	16	–	–	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
The bursting of boilers or tubes, &c. of engines	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
The failure of machinery, springs, &c. of engines	5	1	–	6	–	–	–	–	–	–	–	–	1	2	–	–	–	–	1	2
The failure of tyres	203	10	–	213	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
,, ,, wheels	–	1	1	2	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–
,, ,, axles	55	29	2	86	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
,, ,, brake apparatus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
,, ,, couplings	3	1	1	5	–	1	–	–	–	–	–	1	–	1	1	–	–	–	1	1
,, ,, ropes used in working inclines	2	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
,, ,, tunnels, bridges, viaducts, culverts, &c.	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Broken rails	115	12	5	132	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
The flooding of portions of permanent-way	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Slips in cuttings or embankments	4	1	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fire in trains	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fire at stations or involving injury to bridges or viaducts	4	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other accidents	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL					–	61	–	12	–	–	–	73	1	24	1	3	–	–	2	27

TABLE No. 4.

ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, &c. on the RAILWAYS in the UNITED KINGDOM, reported RAILWAYS on which the same have occurred, and the Number of Passengers and others, and of

NAME OF COMPANY.	Collisions between passenger trains or parts of passenger trains.	Collisions between passenger trains and goods or mineral trains, engines, &c.	Collisions between goods trains or parts of goods trains.	Trains coming in contact with projections from other trains travelling on parallel lines.	Passenger trains or parts of passenger trains leaving the rails.	Goods trains or parts of goods trains, engines, &c. leaving the rails.	Trains or engines travelling in the wrong direction through points.	Trains running into stations or sidings at too high a speed.	Trains running over cattle or other obstructions on the line.	Trains running through gates at level-crossings.	The bursting of boilers or tubes, &c. of engines.	The failure of machinery, springs, &c. of engines.	The failure of tyres.
ENGLAND AND WALES.													
Cambrian - - -	–	–	1	–	–	1	–	–	1	–	–	–	–
Cheshire Lines - - -	–	1	–	–	–	–	–	–	–	–	–	–	1
Festiniog - - -	–	–	–	–	–	–	–	–	–	–	–	–	–
Furness - - - -	–	–	–	–	–	–	–	–	–	–	–	–	1
Great Eastern - - -	2	1	–	–	–	–	–	1	2	–	–	1	3
Great Northern - -	–	1	–	–	–	–	–	–	1	–	–	–	2
Great Western - -	1	1	–	–	3	–	–	–	11	12	–	2	3
Isle of Wight - - -	–	–	–	–	–	–	–	–	–	–	–	–	1
Lancashire and Yorkshire -	2	1	1	–	3	1	–	1	6	–	1	1	–
Lancashire and Yorkshire and London and North-Western Joint.	–	–	–	–	–	–	–	–	1	–	–	–	–
London and North-Western -	1	–	3	–	–	–	–	1	–	–	–	–	10
London and North-Western and Great Western Joint.	–	–	–	–	1	–	–	–	2	–	–	–	–
London and South-Western -	1	–	–	–	–	1	–	–	1	4	–	–	4
London, Brighton, and South Coast.	–	–	–	–	–	–	–	1	1	–	–	1	–
London, Chatham, and Dover	–	–	1	–	–	–	–	–	–	–	–	–	–
Manchester and Milford -	–	–	–	–	1	–	–	–	–	–	–	–	–
Manchester, Sheffield, and Lincolnshire.	–	–	–	–	–	–	–	–	–	–	–	–	–
Maryport and Carlisle - -	–	–	–	–	–	–	–	–	–	–	–	–	–
Metropolitan - - -	–	–	–	–	–	–	–	–	–	–	–	–	2
Metropolitan District -	–	–	–	–	1	–	–	–	–	–	–	–	–
Midland - - -	–	1	–	–	–	–	–	–	1	–	–	–	6
Midland and Great Western Joint.	–	1	–	–	1	–	–	–	–	–	–	–	–
Midland and South-Western Junction.	–	–	–	–	–	–	–	–	–	–	–	–	–
North-Eastern - -	1	1	–	–	2	–	–	–	16	–	–	–	7
North London - - -	–	–	–	–	–	1	–	–	–	–	–	–	1
North Staffordshire - -	–	–	–	–	–	–	–	–	–	–	–	–	–
North Wales Narrow Gauge -	–	–	–	–	1	–	–	–	–	–	–	–	–
Preston, Wyre, and North Union Joint.	–	–	–	–	–	–	–	–	–	–	–	–	1
South-Eastern - -	1	–	–	–	–	–	–	–	–	–	–	–	–
Taff Vale - - - -	–	–	–	–	–	–	–	–	–	–	–	–	1
Private Owners - - -	–	–	–	–	–	–	–	–	–	–	–	–	160
TOTAL, ENGLAND AND WALES - -	9	8	6	–	13	4	–	4	43	16	1	5	203

TABLE No. 4.

during the Six Months ending 30th June 1894, distinguishing the different CLASSES of ACCIDENTS, the different the Servants of Railway Companies, KILLED or INJURED on each Railway by those Accidents.

The failure of wheels.	The failure of axles.	The failure of brake apparatus.	The failure of couplings.	The failure of ropes used in working inclines.	The failure of tunnels, bridges, viaducts, or culverts.	Broken rails.	The flooding of portions of permanent-way.	Slips in cuttings or embankments.	Fire in trains.	Fire at stations or involving injury to bridges or viaducts.	Other accidents.	Number of Passengers and others.		Number of Servants.		Total all Classes.	
												Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	4	–	5
–	2	–	–	–	–	–	–	–	–	–	–	–	25	–	2	–	27
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	2	–	–	–	–	7	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	1	6	–	–	–	–	–	–	3	–	6	–	9
–	1	–	–	–	–	7	–	–	–	–	–	–	1	–	–	–	1
–	7	–	–	–	–	19	–	1	–	1	–	–	5	1	1	1	6
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	1	–	–	3	–	–	–	–	–	–	5	–	3	–	8
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	22	–	–	–	–	17	–	–	–	–	–	–	18	–	4	–	22
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	5	–	2	–	1	–	–	1	–	1	–	1
–	–	–	–	–	–	5	–	1	–	–	1	–	–	–	–	–	–
–	–	–	–	–	–	18	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	8	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	1	–	–	–	–	7	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	6	–	–	2	–	7	–	–	–	2	–	–	1	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	1	–	–	–	–	–	–	–	–	–	2	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	55	–	3	2	1	115	–	4	–	4	1	–	61	1	24	1	85

[Continued on next page

TABLE No. 4.—Number of Accidents to Trains

NAME OF COMPANY.	Collisions between passenger trains or parts of passenger trains.	Collisions between passenger trains and goods or mineral trains, engines, &c.	Collisions between goods trains or parts of goods trains.	Trains coming in contact with projections from other trains travelling on parallel lines.	Passenger trains or parts of passenger trains leaving the rails.	Goods trains or parts of goods trains, engines, &c. leaving the rails.	Trains or engines travelling in the wrong direction through points.	Trains running into stations or sidings at too high a speed.	Trains running over cattle or other obstructions on the line.	Trains running through gates at level-crossings.	The bursting of boilers or tubes, &c. of engines.	The failure of machinery, springs, &c. of engines.	The failure of tyres.
SCOTLAND.													
Caledonian	–	–	–	–	1	–	–	–	5	–	–	–	5
City of Glasgow Union	–	–	–	–		–	–	–	1	–	–	–	–
Glasgow and South-Western	–	–	–	–	–	–	–	–	1	–	–	–	1
Glasgow, Barhead, and Kilmarnock.	–	–	–	–	–	–	–	–	–	–	–	1	–
Great North of Scotland	–	–	–	–	–	–	–	–	–	–	–	–	1
Highland	–	1	–	–	–	–	–	–	–	–	–	–	1
North British	–	1	–	–	1	–	–	–	8	–	–	–	1
Private Owners	–	–	–	–	–	–	–	–	–	–	–	–	1
TOTAL, SCOTLAND	–	2	–	–	2	–	–	–	15	–	–	1	10
IRELAND.													
Belfast and Northern Counties	–	–	–	–		–	–	–	–	–	–	–	–
Donegal	–	–	–	–	1	–	–	–	–	–	–	–	–
Great Northern of Ireland	–	–	–	–	1	–	–	1	–	–	–	–	–
Great Southern and Western	–	–	–	–	–	–	–	–	–	–	–	–	–
Midland Great Western	–	1	–	–	–	–	–	–	–	–	–	–	–
Waterford and Limerick	–	–	–	–	2	–	–	–	3	–	–	–	–
TOTAL, IRELAND	–	1	–	–	4	–	–	1	3	–	–	–	–
TOTAL, UNITED KINGDOM	**9**	**11**	**6**	–	**19**	**4**	–	**5**	**61**	**16**	**1**	**6**	**213**

lling-Stock, Permanent-Way, &c.—*continued.*

The ilure of heels.	The failure of axles.	The failure of brake appa-ratus.	The failure of coup-lings.	The failure of ropes used in working inclines.	The failure of tunnels, bridges, viaducts, or culverts.	Broken rails.	The flooding of portions of per-manent-way.	Slips in cuttings or embank-ments.	Fire in trains.	Fire at stations or in-volving injury to bridges or via-ducts.	Other acci-dents.	Number of Passengers and others.		Number of Servants.		Total all Classes.	
												Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.
–	7	–	–	–	–	5	–	1	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	1	–
1	1	–	–	–	–	–	–	–	–	–	–	–	2	–	2	–	4
–	17	–	–	–	–	5	–	–	–	–	–	–	10	–	–	–	10
–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	29	–	1	–	–	12	–	1	–	–	–	–	12	1	3	1	15
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–
1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	2	–	1	–	–	5	–	–	–	–	–	–	–	–	–	–	–
2	**86**	–	**5**	**2**	**1**	**132**	–	**5**	–	**4**	**1**	–	**73**	**2**	**27**	**2**	**100**

TABLE No. 5.

NUMBER of SERVANTS of RAILWAY COMPANIES and CONTRACTORS reported, during the the Six Months ending 30th
used exclusively upon RAILWAYS, distinguishing the Number which have occurred on each Railway or System of

NAME OF COMPANY.	From accidents to trains, &c. *See* Table No. 4.		Whilst coupling or uncoupling vehicles.		By coming in contact whilst riding on vehicles during shunting with other vehicles, &c. standing on adjacent lines.		Whilst passing over, or standing upon, buffers during shunting.		When getting on or off, or falling off, engines, waggons, &c. during shunting.		Whilst braking, spragging, or chocking wheels.		Whilst attending to ground-points, marshalling trains, &c.		Whilst moving vehicles by capstans, turntables, props, &c. during shunting.		By other accidents during shunting operations, not included in the preceding.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
ENGLAND AND WALES.																		
Barry	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Brecon and Merthyr and London and North-Western Joint.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cambrian	–	4	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	5
Carlisle Cidadel Station	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–
Cheshire Lines	–	2	–	1	–	–	–	–	–	1	–	–	–	–	–	–	2	2
Furness	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Great Eastern	–	6	–	1	–	–	–	–	–	2	–	–	–	–	–	4	2	7
Great Northern	–	–	–	10	–	1	–	–	–	1	–	11	–	–	–	7	2	11
Great Northern and Great Eastern Joint.	–	–	1	1	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Great Western	1	1	–	18	–	–	–	–	–	15	–	16	–	–	2	17	2	18
Hull, Barnsley, and West Riding Junction.	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	2	–	–
Lancashire and Yorkshire	–	3	4	28	–	–	–	1	2	20	–	12	1	6	1	15	6	59
Lancashire and Yorkshire and London and North-Western Joint.	–	–	–	2	–	–	–	–	1	1	–	–	–	–	–	–	–	1
London and India Docks	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
London and North-Western	–	4	–	32	–	–	–	1	–	19	–	13	–	–	2	51	6	44
London and North-Western and Great Western Joint.	–	–	1	3	–	–	–	–	–	–	–	–	–	1	–	2	–	1
London and South-Western	–	1	–	4	–	1	–	1	–	5	–	3	–	–	–	2	–	13
London and South-Western, and London, Brighton, and South Coast,	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	
London, Brighton, and South Coast	–	–	–	5	–	–	–	–	–	1	–	–	–	–	–	2	2	6
London, Chatham, and Dover	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
London, Tilbury, and Southend	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Macclesfield Committee	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Manchester, Sheffield, and Lincolnshire	–	–	–	6	–	1	–	–	–	2	1	5	–	–	–	1	3	7
Metropolitan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Metropolitan and Great Western Joint.	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–
Metropolitan District	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Midland	–	–	–	3	–	–	–	–	1	5	–	2	–	–	1	9	7	12
Midland and Great Western Joint	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Midland and Great Northern Joint	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North and South-Western Junction	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North-Eastern	–	–	1	13	1	–	–	1	–	9	–	3	–	3	2	18	1	–
North London	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1
North Staffordshire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Rhymney	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Sheffield and Midland Committee	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1

TABLE No. 5.

ne 1894, as KILLED or INJURED in the UNITED KINGDOM by the TRAVELLING of TRAINS or the MOVEMENT of VEHICLES ilway, and classifying as far as practicable the Nature and Causes of the Accidents occasioning the Death or Injury.

From falling off engines, &c. during the travelling of trains.		By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains.		When getting on or off engines, vans, &c. during the travelling of trains.		Whilst attending to, or by the failure of, machinery, &c. of engines in steam.		Whilst working on the permanent-way, sidings, &c.		Whilst attending to gates at level-crossings.		Whilst walking, crossing, or standing on the line on duty.		From being caught between vehicles.		From falling or being caught between trains and platforms, walls &c.		Whilst walking, &c. on the line on the way home or to work.		Mis-cellaneous.		TOTAL.	
lled.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed	In-jured.	Killed.	In-jured.	Killed.	In-jured.	Killed.	In-jured.
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	3	–	–	3	–	–	–	–	1	–	–	–	–	5	10
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	2
–	1	–	–	–	1	–	–	1	1	–	–	6	3	–	–	–	–	1	–	–	–	10	26
–	1	–	2	–	2	–	3	3	4	–	–	4	7	–	1	1	4	2	–	–	5	12	70
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	1	5
–	–	–	5	–	9	–	44	3	4	1	–	4	9	–	2	1	3	3	1	1	11	18	173
–	–	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	6
–	2	–	–	–	11	1	31	4	2	–	–	13	16	–	1	–	2	–	–	–	5	32	209
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	3	2	8
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
–	9	–	–	–	1	–	39	4	7	–	–	9	11	–	13	2	1	1	1	–	12	24	258
–	–	–	–	–	–	–	–	1	–	–	–	–	2	–	–	–	–	–	–	1	1	3	10
–	1	1	1	–	5	–	4	1	–	–	–	5	9	–	–	1	–	1	–	–	8	9	58
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	1	–	–	2	–	–	–	2	–	–	–	2	3	–	1	–	–	–	–	–	1	8	20
–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	3	–	–	1	6	3
–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	1	–	2	–	–	–	2	–	2	–	–	1	2	1	1	–	1	–	–	1	1	7	34
–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3
–	4	1	–	–	2	–	3	5	3	–	–	7	4	1	2	–	1	–	–	1	2	24	52
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
1	2	–	4	1	2	–	39	3	–	1	–	11	8	1	7	1	2	1	–	1	6	26	137
–	1	–	–	–	2	–	2	–	2	–	–	2	1	–	1	–	–	–	–	–	3	2	16
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	1
–	–	–	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	4
–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	2

[*Continued on next page.*]

TABLE No. 5.—Number of Servants reported

NAME OF COMPANY.	From accidents to trains, &c. *See* Table No. 4.		Whilst coupling or uncoupling vehicles.		By coming in contact whilst riding on vehicles during shunting with other vehicles, &c. standing on adjacent lines.		Whilst passing over, or standing upon, buffers during shunting.		When getting on or off, or falling off, engines, waggons, &c. during shunting.		Whilst braking, spragging, or chocking wheels.		Whilst attending to ground-points, marshalling trains, &c.		Whils moving vehicles by capstans, turntables, props, &c. during shunting.		By other accidents during shunting operations not included in the preceding.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Somerset and Dorset	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
South-Eastern	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	5	1	4
Stalybridge Joint Station	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Taff Vale	–	–	–	1	–	–	–	–	–	2	–	1	–	–	–	–	–	–
TOTAL, ENGLAND AND WALES	1	24	8	129	1	3	–	4	4	87	1	68	1	10	8	137	37	219
SCOTLAND.																		
Caledonian	–	–	1	7	–	1	–	1	1	6	–	11	–	–	2	3	2	10
City of Glasgow Union	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Glasgow and Paisley Joint	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Glasgow and South-Western	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	1	2
Glasgow, Barrhead, and Kilmarnock	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Great North of Scotland	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Highland	–	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North British	–	–	–	5	–	–	–	2	1	4	1	2	–	–	–	2	3	10
Perth General Station	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL, SCOTLAND	1	3	2	14	–	1	–	4	2	10	1	13	–	–	3	6	6	23
IRELAND.																		
Belfast and Northern Counties	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dublin, Wicklow, and Wexford	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Great Northern of Ireland	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	2	2
Great Southern and Western	–	–	1	1	–	–	–	–	–	1	–	–	–	–	–	2	1	–
Midland Great Western of Ireland	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–
Sligo, Leitrim, and Northern Countries	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL, IRELAND	–	–	1	1	–	–	–	1	–	2	–	–	–	–	–	2	5	2
TOTAL, UNITED KINGDOM	2	27	11	144	1	4	–	9	6	99	2	81	1	10	11	145	48	244

Note.—An analysis and comparison of the figures in the Returns of accidents appear to show that the Railway Companies do not report all mino
In estimating, therefore, the reliability of the figures set out, and in comparing the proportion of accidents on the several lines, this difference must b
consideration for adoption with a view to securing greater uniformity and accuracy in the Returns supplied.

as Killed or Injured, &c.—*continued.*

From falling off engines, &c. during the travelling of trains.		By coming in contact with over-bridges or erections on the sides of the line during the travelling of trains.		When getting on or off engines, vans, &c. during the travelling of trains.		Whilst attending to, or by the failure of, machinery, &c. of engines in steam.		Whilst working on the permanent-way, sidings, &c.		Whilst attending to gates at level-crossings.		Whilst walking, crossing, or standing on the line on duty.		From being caught between vehicles.		From falling or being caught between trains and platforms, walls, &c.		Whilst walking, &c. on the line on the way home or to work.		Miscellaneous.		Total.	
Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed	Injured.	Killed.	Injured.	Killed.	In jured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
–	–	–	–	–	–	–	–	–	2	–	–	–	1	–	–	–	–	–	–	–	–	1	2
–	–	–	–	–	–	–	3	2	1	–	–	4	3	–	–	–	–	–	–	–	1	7	18
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	6
1	25	2	15	4	37	1	171	30	33	2	–	74	84	3	31	7	17	13	3	5	62	203	1,159
–	4	–	4	–	1	–	5	2	2	1	–	3	3	1	–	–	2	–	1	–	1	13	62
–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	1	1	2
1	1	–	2	–	–	–	2	–	1	–	–	1	2	–	–	–	1	–	–	–	–	3	13
–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	4
–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	3	1
–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	3
–	2	–	4	1	3	–	3	1	3	–	–	2	4	–	–	–	–	–	–	3	–	12	44
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
1	7	–	10	1	4	–	10	5	10	1	–	7	9	1	1	–	3	–	1	3	2	34	131
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4	4
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	5
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	1
–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
1	–	–	–	2	1	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	1	9	12
3	**32**	**2**	**25**	**7**	**42**	**1**	**181**	**35**	**44**	**3**	**–**	**81**	**94**	**4**	**32**	**7**	**20**	**13**	**4**	**8**	**65**	**246**	**1,302**

accidents on an uniform basis, owing to a difference in their interpretation of the meaning of the provisions of the Regulation of Railways Act, 1871, borne in mind, in fairness to those Companies who habitually report every accident of whatever kind which occurs. Means are, however, under

TABLE No. 6.

TABLE showing the different OCCUPATIONS of SERVANTS of RAILWAY COMPANIES and CONTRACTORS who were KILLED and INJURED during the Six Months ending 30th June 1894, and classifying their INJURIES as far as practicable.

CLASS OF SERVICE.	Fatal.	Amputations.			Fractures.		Dislocations.	Crushes.			Scalds, Burns.	Sprains, Cuts, or Bruises.	Severe.	Shaken.	Slight.	Unspecified Injury to				Miscellaneous.	Total Injured.
		Legs or Arms.	Feet or Hands.	Toes or Fingers.	Legs or Arms.	Collar-bones or Ribs.		Legs or Arms.	Feet or Hands.	Body.						Head.	Body.	Legs or Arms.	Feet or Hands.		
Brakesmen and Goods-guards	29	5	2	4	8	5	6	2	28	2	1	69	10	3	2	8	25	29	23	1	233
Capstanmen	2	1	1	–	3	–	–	–	6	–	–	5	–	–	–	–	4	9	9	–	38
Carmen	2	–	–	–	1	2	–	–	2	–	–	1	–	–	–	2	–	1	–	–	9
Carriage-cleaners	4	–	–	–	–	–	–	–	1	–	–	3	1	–	–	1	2	–	1	–	9
Carriage or waggon examiners	2	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	2	–	–	–	4
Checkers	1	1	1	–	1	1	1	–	1	–	–	2	1	–	–	–	2	–	–	–	11
Chockers, Chain-boys, and Slippers.	2	–	–	–	–	–	1	–	3	1	–	2	1	–	–	–	–	2	11	–	21
Clerks	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Engine-cleaners	3	1	1	–	–	1	–	–	6	2	–	3	4	–	–	1	–	3	2	–	24
Engine-drivers	5	1	–	2	5	3	5	–	6	–	4	33	6	3	3	8	7	23	13	4	126
Firemen	14	1	–	4	2	3	3	1	16	2	10	61	10	2	5	10	8	24	30	3	195
Gatekeepers	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Greasers	1	–	–	–	–	–	–	–	1	1	–	2	–	–	1	–	–	–	–	–	5
Guards, Passenger	4	–	–	–	1	–	–	–	–	–	–	15	2	1	2	2	1	3	–	–	27
Horse-drivers	2	–	–	1	1	1	–	–	1	–	–	5	4	1	–	–	3	4	1	–	22
Inspectors	5	–	–	–	–	–	–	–	–	–	1	4	1	–	–	1	–	–	2	–	9
Labourers	17	–	–	–	1	1	–	–	8	–	–	10	1	1	1	3	3	4	4		37
Lampmen	2	–	–	–	–	–	–	–	–	1	–	2	–	–	–	–	–	–	–	–	3
Loaders and Sheeters	2	–	–	–	–	–	–	–	2	1	–	–	–	–	–	–	1	3	–	–	7
Mechanics	5	1	–	–	1	1	1	–	–	–	–	5	1	1	3	–	1	4	2	–	21
Messengers	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	–	2
Number-takers	1	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	2	1	–	5
Permanent-way Men	56	4	4	–	7	4	–	2	1	–	–	9	9	1	2	5	4	6	1	–	59
Pointsmen	2	–	1	–	–	–	–	–	1		–	1	–	–	–	–	1	2	2	–	8
Policemen	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–		–	1
Porters	27	2	1	3	8	6	1	7	23	6	1	35	9	1	2	9	12	22	16	–	164
Shunters	17	1	–	2	4	9	2	5	28	1	–	39	6	–	4	14	14	26	27	1	183
Signal-fitters	3	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Signalmen	4	–	–	–	2	2	–	–	1	–	–	3	1	–	–	–	–	1	2	–	12
Station-masters	6	–	–	–	–	–	–	–	1	–	–	2	–	–	–	–	–	–	–	–	3
Ticket-collectors	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	1	–	3
Watchmen	3	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	–	–	3
Yardsmen	3	–	–	–	–	–	–	1	2	–	–	–	–	–	1	1	–	1	1	–	7
Miscellaneous	6	1	2	–	2	–		–	4	2	–	4	3	2	2	3	3	8	7	–	43
Contractors' Servants	10	–	1	–	2	–	–	–			–	1	–		–	1		1	–	–	6
TOTAL	246	20	15	16	49	40	20	18	143	19	17	319	74	16	29	69	93	179	157	9	1302

TABLE No. 7.

NUMBER of PERSONS reported, during the Six Months ending June 30th 1894, as having been KILLED or INJURED whilst upon the Companies' Premises, by Accidents in which the Movement of Vehicles used exclusively upon Railways was not concerned, distinguishing between Passengers, Servants of Companies, and other Persons, and classifying, as far as practicable, the Nature and Causes of the Accidents occasioning the Death or Injury.

	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS :—								
Whilst ascending or descending steps at stations	2	68	—	1	—	—	2	69
By being struck by barrows, by falling over packages, &c. on station platforms	—	16	—	1	—	—	—	17
From falling off platforms	—	15	—	—	—	—	—	15
By other accidents	1	34	—	—	—	—	1	34
TOTAL	3	133	—	2	—	—	3	135
SERVANTS :—								
Whilst loading, unloading, or sheeting waggons	4	618	—	5	—	3	4	626
Whilst moving or carrying goods in warehouses, &c.	2	138	—	—	—	—	2	138
Whilst working at cranes or capstans	—	46	—	—	—	1	—	47
By the falling of waggon-doors, lamps, bales of goods, &c.	1	113	—	4	—	—	1	117
From falling off, or when getting on or off, stationary engines or vehicles	1	120	—	1	—	—	1	121
From falling off platforms, ladders, scaffolds, &c.	8	188	1	3	—	—	9	191
By stumbling whilst walking on the line or platforms	—	157	—	1	—	1	—	159
Whilst attending to stationary engines in sheds	—	91	—	—	—	—	—	91
By being trampled on or kicked by horses	—	25	—	—	—	—	—	25
Whilst working on the line or in sidings	2	274	—	—	—	—	2	274
Miscellaneous	6	215	—	—	—	—	6	215
TOTAL	24	1,985	1	14	—	5	25	2,004
PERSONS ON BUSINESS AT STATIONS AND OTHERS	7	86	—	1	—	—	7	87
SUMMARY :—								
Passengers	3	133	—	2	—	—	3	135
Servants	24	1,985	1	14	—	5	25	2,004
Persons on business at stations and others	7	86	—	1	—	—	7	87
TOTAL ALL CLASSES	34	2,204	1	17	—	5	35	2,226

Board of Trade,
4th September 1894.

COURTENAY BOYLE.

REPORTS TO THE BOARD OF TRADE BY INSPECTING OFFICERS OF THE RAILWAY DEPARTMENT UPON CERTAIN ACCIDENTS WHICH HAVE BEEN INQUIRED INTO.

—	Page.	—	Page.
GREAT WESTERN:		GREAT WESTERN:	
Major Yorke's report on the collision that occurred on the 15th May, between a slip coach and a passenger train at Reading - - -	23	Major Yorke's report of his inspection of the Uffington station and level-crossing, at which certain fatal accidents have occurred - -	27

For other Reports of Inquiries into Accidents which have occurred during the six months, *see* [C.—7385] and [C.—7447].

GREAT WESTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
June 11th, 1894.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 24th ultimo, the result of my enquiry into the collision that occurred on the 15th May at Reading station, on the Great Western Railway.

On this occasion as the slip coach off the 5.45 p.m. South Wales express from Paddington (due at Reading at 6.29) was running into the main down platform, it collided with the 6.40 p.m. local train from Reading to Basingstoke, which was standing at the western end of the same platform.

Five passengers, all of whom were seated in the slip coach, are reported to have complained of shock or bruises.

The train consisted of seven vehicles, namely, two vans, two third-class carriages, two composite carriages, and a horse-box, and the engine was not attached to it at the time of the collision, nor were the brakes on.

The brake-cylinder of the front van was damaged by the collision.

The slip-coach was an eight-wheeled composite-carriage, with a four-wheeled bogie at each end, and it was fitted with the automatic vacuum-brake and with the hand-brake, both of which worked blocks on all the wheels. There was a guard's compartment at each end fitted with a special apparatus for slipping, and with levers for working both the vacuum and hand brakes.

No injury was sustained by the slip-coach or permanent-way.

Description.

This collision occurred at the western extremity of the down platform at Reading, which is at present a long single-sided station. The main lines pass outside and to the north of the station, and are connected with the platform lines by facing-point junctions on the running lines. There are also bay-lines at the back of the platform at each end.

The middle signal-box is situated nearly opposite the middle of the platform, and at the east and west ends there are the east and west boxes respectively. The facing-points leading from the down main to the down platform line are worked from the middle box and are 209 yards from the place on the latter line where the tail of the Basingstoke train was standing, and a signal-post with two arms on brackets, being the home-signals for the middle box, is fixed about 38 yards from these points. The right hand and higher arm of the two applies to the main down line, and the left hand and lower arm to the platform line. At a distance of 242 yards from these signals in the direction of London there are similar signals reading for the same two roads, which form the home-signals for the east box, and which are slotted from the middle box, and 1,200 yards outside these latter signals are the distant-signals for the east box, consisting as before of two arms fixed on brackets. The gradient through the station is practically level.

The slip carriages on the Great Western Railway are attached to their trains by means of a special appliance, which renders it possible for the automatic vacuum-brake to be operative on these carriages as well as on the rest of the train up to the time of slipping the former. This appliance is so designed that it is not possible for the guard in the slip coach to pull over the lever in his compartment which releases the coupling between the coach and the rest of the train, until he has turned the handle of the slip cock in the flexible coupling of the train pipe, and also the handle of the cock in his compartment, the result of turning these two handles being, to cut off the brake-pipe of the train from that of the coach, and at the same time to shut in and preserve the vacuum in the train pipe and cylinders of the train, and in the train pipe and cylinder of the slip coach, so that when the coach is slipped and becomes separated from the train, no automatic action of the brake occurs, but the coach carries with it in its cylinders and pipe sufficient vacuum to work the brake in case of necessity.

The operations to be performed by the guard are given in the following instructions:

"29. If 20 inches cannot be obtained by the engine, the vacuum-brake must not be "worked, but the slip must depend entirely on the hand-brakes.

"30. The two cock-handles must on no account be touched until just before the guard "wishes to slip. He must then first pull the handle of the cock in the hose coupling "towards the rear of his train, and then pull the handle of the cock inside his compart- "ment to the 'Brake off' position; until he has done this he will be unable to move the slip lever.

"31. After both handles have been pulled over, as described in the foregoing para- "graph and immediately before slipping, the guard must raise the slip cock sufficiently "to disconnect it from the hose pipe attached to the slip carriage." (The guard then pulls the lever which releases the slip hook, and disconnects the coach from the rest of the train.)

"32. Immediately after slipping, the guard must apply the hand-brake on the slipped "portion, and when speed is reduced sufficiently, take it off and allow the slip carriage "to run to the station platform. The vacuum-brake can be applied by pushing the "handle to the 'Brake on' position, but this should only be *done in case of emergency.*"

The usual place for slipping appears to be on the west side of the down distant-signal, and "immediately after the slip lever has been pulled over and the coach disconnected, "the guard must apply the hand brake, in order to let the train get well ahead of the "slip coach, so that in the event of the main portion of the train being unexpectedly "stopped, he may have a sufficient distance to stop in without running into it. As "soon as the train is a sufficient distance ahead and the portion of the train slipped is "well under control, the guard must ease off the brake and allow it to run slowly into "the station. The portion slipped must never be allowed to run into the station at "any considerable speed."

If the platform to which the slip-coach has to run is clear, and if the main portion of the train has passed forward sufficiently in advance of the slip coach, the custom is to replace the main down signal to danger behind the train and to reverse the facing points and lower the platform signal so as to allow the slip-coach to run direct into the platform. If on the other hand the platform line is occupied by a train or vehicles, the following rule applies.

Instructions for slipping coaches at Reading.

"When the platform line is not clear, the slips must be stopped dead at the home signal and drawn into the station either by an engine or the horses."

On this occasion the 6.40 p.m. local train to Basingstoke was standing at the down platform, and the slip coach should therefore have been brought to an absolute stop at the down home signal, but as will be seen from the evidence it was not so stopped, but was allowed to run direct to the platform. The 6.40 train generally starts from the bay at the back of the western end of the down platform, but this bay was occupied by another train, and the 6.40 train had therefore to start from the main platform. The slip coach from the South Wales express has to be attached to the Basingstoke train either in front or rear, according to whether the train is in the bay or at the main platform. On the occasion in question, it was to be attached to the rear of the train, and for this purpose the latter should have been backed on to the coach after the latter had reached and come to rest at the platform.

It will be seen from the rules quoted above, that the hand-brake only should be used by the guard for easing or stopping the coach after it has been detached from its train, the vacuum-brake being reserved for cases of emergency.

Evidence.

William Fowler, passenger guard, states: I have been in the company's service 18 years, and passenger guard about 14 years, and I have been working slip coaches for nearly all the time I have been guard. On the 15th May I came on duty at Reading at 7.45 a.m. having come off duty at 6.30 p.m. on the 14th. My hours of duty on the 15th were from 7.45 a.m. to 6.30 p.m. On the evening of the 15th May I was guard in charge of the slip carriage attached to the 5.45 p.m. South Wales express. There was only one slip coach on the train, an eight wheeled tri-composite; it was fitted with the automatic vacuum-brake and with the hand-brake, both of which work blocks on all the eight wheels of the coach. The vacuum-brake connection were properly made at Paddington when the train started; we had then 25 inches of vacuum There is no stop between Paddington and Reading, and the vacuum was maintained all the time to Reading. I am fully acquainted with the regulations for slipping carriages and working the brakes on slip coaches. The usual slipping place is the down distant-signal, but if this signal is at danger we do not slip at this place, but we wait till we get a good view of the outer home-signals. If this signal is lowered by the time we see it we then slip the coach. Before slipping, the first thing to do is to disconnect the vacuum-pipe between the slip coach and the main train, having previously turned the handles of the valve outside and inside the coach. The next thing is to look out for the distant-signal and if all is then right we slip at the distant-signal by pulling over the lever in the van. After slipping we apply the hand-brake at once to check the speed of the coach, until we get the coach under proper control, and then we release the brake and allow the coach to run up to the home signal. We are prepared to pull up at the home-signal, but if the platform is clear

into which we are to run, the signalman has time to open the facing points and lower the signal to admit us to the platform. If the platform is not clear the instructions are that the slip coach is to pull up dead at the home-signal, and be drawn into the station by an engine or horse. On the occasion in question, I slipped in the ordinary way at the distant-signal and the home-signal being against me, I was prepared to pull up at them. Shortly before reaching the points leading to the platform, I saw the points opened for the platform line, and at the same time I received a hand-signal from the man in the central cabin to draw past the home-signal to the platform. He gave us the signal with a green flag. The horse was standing at the home-signal ready to drag the coach in. I remarked to the horseman that I thought the carriage would run in all right by itself. On approaching the platform the ticket collector called out to me that the inspector was calling me up to the train. I was going very slowly and the brake was not on. I was watching to see whether the coach would reach the train, the inspector still waving us on, and when within half a coach length of the train I applied the vacuum-brake so as to ease the coach on to the train, but before the vacuum-brake took effect my coach had struck the train. The shock was a smart one. It did not knock me down, but no damage whatsoever was done to the carriage or train. I cannot account for the fact that the brake did not act. I had not worked with that particular slip carriage for some time. I was working it again the next night and I again found the vacuum did not work quite satisfactorily and I had to use the hand-brake. When I slipped the coach my gauge showed a vacuum of 25 inches, and I had the same when I arrived at the station before applying the brake. I did not use the vacuum-brake on the day in question, until I arrived close up to the train, and if the vacuum-brake had then acted properly, the coach would have pulled up within a yard. I cannot say for certain whether the brake went on at all, but I presume it did go on as there was no rebound. After finding the brake did not act satisfactorily on the 16th inst. I reported the matter and the carriage has not been running since. The train to which the slip coach was to be attached was the 6 40 pm. local to Basingstoke. As a rule it is on the bay, and in that case the slip would be attached in front. On this occasion the bay was occupied by another local train which had been delayed waiting for connections. I did not know the train was standing at the main down platform till I got through the points leading into the station.

Thomas Goodey, signalman, states: I have been in the Company's service 28 years, and about 24 years signalman. I have been at Reading 20 years, and 11½ years in the centre box. It is an eight-hour box, and I came on duty at 6 p.m. on the 15th May. I know the regulations as to working the slip carriages, and I knew that the 5.45 p.m. has a slip carriage attached to it. On the 15th inst. the 5.45 p.m. train passed through Reading right time. I was watching the slip approaching the station after the train had gone through, and I saw it coming down quite steadily, and it had nearly come to a stand before I pulled the points over for it. The horse was there at the home-signal to draw it in, but the guard seems to have told the horseman that he did not require his assistance. As soon as I pulled the points over I gave the guard a green flag, to indicate that the points were right for him to come into the station. The instructions say that the carriage should come to a dead stand at the home-signal, if that is not lowered. On this occasion the coach was not quite at a stand when I gave the hand-signal for it to run into the station. I knew the train, 6.40 Basingstoke, was standing at the down platform, but the tail of the train was about 236 yards from the home-signal, and about 60 or 70 yards from the point when the slip usually stops at the platform. As the coach passed my box it was going about four miles an hour, and I had no idea that he was not going to stop at the usual place. On occasions I have known the horse to be attached to the slip carriages while they are still moving, and without bringing them to a dead stand—this being done to save the horses the effort of starting the coach from rest.

James Daniel Clarke, platform inspector, states: I have been in the Company's service 32 years, and platform inspector at Reading for nine years. On the 15th May I came on duty at 9.30 a.m., and went off after the 9.40 p.m. up train had left. I have 1½ hours for meals. I know the regulation as to working the slip carriages, and on the 15th instant I was on the down platform at the front end of the 6.40 Basingstoke train when the South Wales express passed through. As a rule the Basingstoke train starts from the bay, but on the day in question the bay was occupied by another train which had been delayed. If the train is in the bay, the slip carriage is picked up from the down platform line and put in front of the Basingstoke train. On this occasion I decided that the slip should be attached in rear of the train. I then walked to the tail of the train. I saw the slip coming round the bend of the line by the facing-points at a walking pace, and when it reached the platform I signalled to the guard to let the slip run up to the train. I saw that the horse was not drawing the coach, which was running by itself. The coach as it came up to me was going about five miles an hour. The guard was looking through the front window. I quite thought he would have his hand-brake on sufficiently to control the carriage and to pull it up within a yard if necessary. As he did not put the brake on when he was nearing me, I called out to him Whoa! and he then put the brake on just after he passed me. I could hear the vacuum-brake applied, but I cannot say whether the blocks went on or not. Before anything more could be done the coach struck the train. The blow drove the train ahead about six yards, as the brakes were off, and the engine was not attached. I am sure that the train was at rest and not moving back to meet the coach. My intention was to let the coach run up to the tail of the train straight away before it came to a stand, and the man was there ready to couple up. There was no particular reason for this being done, as the train was not due away for five minutes. The next night the guard complained to me that the brake was not as good as the one he usually works, and the carriage has not been running since.

Henry Lane, carriage examiner, states: I have examined No. 1 067, the slip carriage which was running in the South Wales express on the night of the 15th instant. This was on the night of the 16th. I had heard from the guard Fowler that the vacuum was not working satisfactorily. I found nothing at all the matter, but I reported the matter to the foreman and the coach is still stopped from running.

Inspector Charlton states: I received a report that No. 1,067 slip carriage was stopped at Reading for inspection, as the guard had stated that the vacuum-brake was not working satisfactorily. I went to Reading on the 17th and examined the brakes, and I found the hand-brake in perfect order, but the vacuum-brake did not apply quite so quickly as it should do owing to the brake-blocks requiring slight adjustment. They want taking up a hole.

Conclusion.

This collision must be attributed to a departure on the part of guard Fowler, inspector Clarke, and signalman Goodey, from the rules laid down for dealing with slip coaches when they have been detached from the train.

On this occasion guard Fowler slipped the coach at the usual place, and on approaching the down home-signals he found the down platform signal at danger. It was therefore his duty to have brought his coach to a dead stop at this signal, from which spot it should have been drawn up to the platform by the horse, which was ready on the ground waiting for the coach. It was also signalman Goodey's duty to have withheld permission for the coach to pass the signal until after it had come to a stand. Instead of so acting these men took it upon themselves to depart from the rule, and signalman Goodey gave and guard Fowler accepted a hand-signal for the coach to run up to the platform without first coming to a stop at the proper place. As Fowler passed the home-signal he called out to the man in charge of the horse that he did not require him, as he had sufficient way on the coach.

On reaching the platform Fowler was told by one of the station staff that inspector Clarke was beckoning to him to allow the coach to run up to the rear of the 6.40 p.m. train to Basingstoke which was standing at the platform, and to which the coach was to be coupled. Acting upon this, Fowler did not stop the coach at the usual part of the platform, but allowed it to run close up to the train, and when about half a coach length from the train he applied his automatic vacuum-brake, which however, according to his statement, was rather slower than usual in taking effect, the result being that the coach struck the train in front with sufficient violence to drive it forward six yards. In this matter again Fowler acted contrary to rule, for the instructions lay down that the hand-brake is to be used as a general rule in stopping slip coaches, the vacuum-brake being applied only in cases of emergency. It was not his fault that the vacuum-brake did not act with its usual rapidity, but had he used his hand-brake for the purpose of controlling his coach as it ran alongside the platform, he would have been able to pull up at any place without having recourse to the vacuum-brake at all, and the emergency necessitating the use of the latter would not have arisen.

The chief responsibility for this mishap must in my opinion rest upon guard Fowler for the reasons (1) that he neglected to bring his slip coach to a stop outside the home-signal (2) that he did not use his hand-brake for controlling and stopping the coach when it reached the platform, and (3) that he committed an error of judgment in applying the vacuum-brake too late. I also consider he was wrong in acting upon the signal he received from inspector Clarke and allowing the coach to run close up to the train to which it was to be coupled instead of stopping it at the usual place, which was 50 or 60 yards from the tail of the train. But the fact that in this instance Fowler was acting under the directions of the platform inspector may perhaps be regarded as a sufficient excuse for the error. Guard Fowler had been on duty $10\frac{3}{4}$ hours at the time of the collision, and his day's work was finished.

Platform inspector Clarke is much to blame for beckoning to Fowler to permit the coach to run up to the end of the Basingstoke train before it was stopped. His duty in my opinion, was to have at once given a signal to stop the coach so soon as he saw it approaching the platform by its own impetus instead of being horsed in, knowing as he did that the platform was already occupied by the Basingstoke train, and that it was contrary to rule for the coach to run up to the platform in this manner. Taking into consideration the position of authority held by him, his responsibility for what occurred is almost as great as Fowler's. He had been on duty for nine hours.

Signalman Goodey, who had been on duty over 29 minutes, must also be held to have put himself in the wrong by giving to Fowler a hand-signal authorising him to run up to the platform before the coach had been brought to an absolute stop at the home-signals. It was this action on his part that led Fowler in the first instance into doing wrong. But though Goodey's error comes first in the sequence of events, Fowler had sole charge of the slip coach, and it was incumbent on him to refuse to depart from strict compliance with the regulations, and for this and the other reasons stated the greater share of responsibility rests on Fowler.

It is a matter for surprise and regret that these three men, each one of whom has many years' experience, and fills a position of trust and responsibility, should have been guilty of such breaches of the rules laid down for their guidance, and I am unable to suggest any excuse for their respective actions. There was ample time for the slip coach to have been stopped in the proper manner at the home-signal, and for the subsequent operation (viz., the drawing of it up to the platform and the coupling of it to the Basingstoke train) to have been performed with due care and in the authorised manner. And the matter becomes the more serious in view of the admission made by Goodey, that this is not the first occasion on which the rule as to bringing the slip coach to a dead stop at the home-signal when the latter is at danger, has been disregarded.

Slip coaches may sometimes be necessary, but their use should be permitted only under the strictest precautions. The apparatus provided, and the rules laid down by the railway company, appear to me to be quite satisfactory, and it is to be hoped that in future the latter will be carefully observed by all concerned.

It is right to add that though from a subsequent examination of the coach it was found that the brake blocks required some slight adjustment so as to render the action of the vacuum-brake rather more rapid, it does not appear that the brake was in bad order or that the coach was not fit to run. If the rules had been obeyed the vacuum-brake would not have been put in action, and the hand-brake would have been used and the coach stopped at the proper place by it alone.

I have, &c.,
H. A. Yorke,
Major, R.E.

The Assistant Secretary,
Railway Department,
Board of Trade.

GREAT WESTERN RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
August 11th, 1894.

Sir,

I have the honour to report for the information of the Board of Trade, that in compliance with the instructions contained in your Minute of the 12th July, I inspected on the 26th ultimo Uffington station and level-crossing on the Great Western Railway.

I notified the date of my intended visit to the memorialists and other gentlemen who had been in communication with the Board of Trade on the condition of the station and crossing, and I was met on my arrival at the place by a large number of residents representing all classes of the community, and it was at once apparent that considerable feeling exists in the locality on the subject.

Among those present were Colonel C. G. Edwards (Chairman of the Faringdon Highway Board) Mr. J. Smith (Vice-Chairman), Mr. G. F. Crowdy (Clerk to the Board), Mr. Jotcham (Coroner), Mr. A. K. Loyd, Q.C., Mr. W. Powell, Mr. W. J. Butler, Mr. J. Wheeler, Mr. E. Clark, Mr. G. Adams, Mr. J. Fletcher, and all the principal farmers and landowners of the neighbourhood. I was also joined by the following officers of the Great Western Railway, viz., Mr. T. Allen, (Superintendent of the line), Mr. Inglis (Chief Engineer) and Mr. Gibbs (District Traffic Superintendent).

I attach a plan of the station which was supplied to me by the Railway Company, from which it will be seen that the station is situated at the junction of the Faringdon branch with the Great Western main lines, and so far as passenger traffic is concerned the platform accommodation is similar to that usually found at small road-side stations.

There are up and down platforms each about 100 yards long, with booking office and hall, waiting-room, ladies-room, and conveniences for both sexes on the up platform, and with a waiting-shed fitted with seats on the down platform. The up platform is situated in the angle between the branch and up main lines, and the platform and other accomodation on it is common to both.

Considering the small amount of passenger traffic (*see* Appendix A) to and from this station, the platform accommodation may be regarded as sufficient.

The Faringdon branch line passes along the back of the up platform and joins the main line east of the station, and north of the branch platform line there is a loop to enable the engines to run round the branch trains. Between the branch line and the main line there are three goods sidings, which join the up main line, the branch main line and the branch loop respectively, the effect of which arrangement is to render the up platform, on which as stated are situated the principal station buildings, an island platform, so that access cannot be gained to it from either the north or the south without crossing at least either two siding lines or two main lines. This most objectionable arrangement will be referred to again later on.

The high road from Uffington to Faringdon, which at this point runs nearly due north and south, passes over the railway obliquely at the west end of the station, and the two (Great Western) main lines and the three sidings already referred to are carried

across this road on the level. The level crossing so formed is (according to the plan) about 45 yards long, and there are single gates across it at each end, which gates when open for the road do not close across the railway and form no sort of fence for the latter. There are wickets alongside of the main gates for foot passengers. Each of the road gates can be opened and shut independently of the other by a properly interlocked lever in the signal-box, and the wickets also are controlled from the box.

After inspecting the station and crossing, I invited the gentlemen present to make any remarks they desired as to the matters they wished me to lay before the Board of Trade, whereupon Colonel Edwards, Messrs. Jotcham, Crowdy, Loyd, Wheeler, Clark, Cooke, Reade, Butler, and others explained to me the nature of the grievances in connection with the station and crossing to which reference has been made in the recent correspondence. These complaints may be summarised as follows, viz.:—

(1.) Danger to those using the level-crossing owing to its length and unprotected condition.

(2.) Delay to those passing along the road, owing to the constant passage of trains along the main lines, and to the shunting on the three sidings which cross the road.

(3.) Danger to men in charge of milk carts, to carters and to others who have to deliver milk or produce at, or fetch empty churns, corn, coal, stone, &c. &c., from the station, owing to the extremely inadequate siding and loading accommodation.

(4.) Delays to the men referred to in (3.) owing to the passage of trains and to the shunting of waggons across the road, whereby access to the gates is constantly cut off.

(5.) Approach to the station both dangerous and difficult, owing to the necessity for crossing so many lines of rails.

I may at once say that, so far as I could judge from my inspection of the place, and from the personal testimony of those present, these complaints are in my opinion entirely reasonable, and in no way exaggerated. The arrangements of the station, goods-yard, and level-crossing appear to be as bad as possible, and to have been carried out with little or no regard to the safety and convenience of those who have to make use of them.

As to the two first complaints which refer more especially to the level crossing, it is evident that the length of the crossing, the number of lines to be passed over, and the absence of any means of fencing the railway, when the gates are open for road traffic, must necessarily involve risk or delay to those who have to cross the railway. I was informed that the number of trains passing through Uffington every day at the present time is 61 up and 60 down, of which 10 up and 9 down are stopping trains, the remainder running through. (*See* Appendix B.) This is a total of 121 trains every 24 hours. It is probable that most of these trains pass in the day-time, and if it be assumed that three-quarters of them pass between 6 a.m. and 6 p.m. there would be 90 trains passing in 12 hours, or 7·5 trains every hour, or one train every eight minutes.

I also attach a statement which was furnished to me by the Railway Company, which gives particulars of any shunting which on the 21st, 22nd, and 23rd July interfered with the level-crossing. (*See* Appendix C.) On the 21st the actual time occupied by such shunting was 101 minutes between 6 a.m. and 6 p.m. Adding the delay so caused to that occasioned by passing trains, it becomes evident that the existence of the level-crossing at Uffington in its present condition must cause serious inconvenience to those who have to pass along the high road.

Several gentlemen stated in my presence that the delays so produced frequently amount to 20 or 30 minutes, and this is borne out by the return just quoted, for it is shown therein that on the 21st July the crossing was interfered with for periods of 15 minutes, 24 minutes, and 30 minutes respectively, besides others of less duration. Moreover, it is said, that not unfrequently a vehicle which has been permitted to enter the crossing at one end, finds its exit barred at the other end, owing to some necessity having arisen for closing the gates during the time occupied by the vehicle in passing from one side of the lines to the other.

It does not seem necessary to bring any further arguments forward to prove that the complaints of the danger and inconvenience of this level-crossing are well founded.

As regards the complaints of danger and delay to men in charge of milk carts, and to others who have to fetch goods from or deliver them at the station, it will be seen from the plan that the accommodation for traffic of this nature is entirely inadequate and unsatisfactory. There is a small landing stage for milk, at which two, or at the most three, carts can unload or load simultaneously. It is stated that 15 carts deliver

milk every morning at the station, and the same number in the evening, and the confusion that must arise in this cramped space can well be imagined. The carts must either remain outside the station till there is room at the landing stage, or they must collect in the space between the sidings and main lines. And as in the latter case there is no fence between them and the main lines, there is nothing to prevent the horses, if frightened, from running away and getting in front of the trains. Eleven of these carts arrive from the south side, and must cross at least three lines to reach the milk platforms.

The same remarks largely apply to the loading and unloading of corn, coal, stone, &c., &c. The only siding for these purposes is that marked A.A. between the milk-loading stage and the level-crossing, and which is about 30 yards long, and, as shunting has frequently to take place on this siding, the trucks which are being loaded or unloaded are moved away before the work is half done, and the carts have to wait in the yard until it pleases those in charge of the shunting to bring the trucks back for the operation of loading or unloading to be completed.

Moreover, under an agreement with the Railway Company as to the rates for the carriage of milk, the men in charge of the milk carts have to assist in loading it into the trucks, an arrangement doubtless satisfactory to the Railway Company, but one which renders it necessary for the men to leave their horses and carts either outside the station or in the dangerous position just described, while they themselves are attending to the loading of the milk into trucks. It is also stated, and I believe correctly, that carts having once got into the station yard, are often unable to get out again without much delay owing to the passage of trains on the main lines, and to the shunting on the sidings.

The fifth complaint has reference to the road of approach to the station, which is as bad as it can be. There is no access to the branch platform or to the up main platform except by crossing two main lines or two sidings according as the would-be passengers arrive from the south or the north. A passenger from the north who wishes to reach the down platform must cross at least four lines of rails, and a passenger from the south, who wishes to travel by a down train, must cross the main lines to the up platform to get his ticket, and then recross the lines to the down platform.

It was stated by Mr. Wheeler that the number of fatal accidents that have occurred at this station since it was first opened in 1864 is six. But this number includes the case of porter Jennings who on 6th September 1893 fell from a signal post while lighting the lamps, and this has nothing to do with the condition of the station. Of the remaining five fatal accidents two have occurred within the last two years, viz., on April 1st, 1893, and on June 25th, 1894, prior to which there had been no fatal accident for 10 years.

In the former case Mr. E. Jefferies, a well-known farmer in the neighbourhood, who was riding with the old Berks hounds, was knocked down and killed by a runaway horse and cart belonging to one of the dairy farmers. The huntsman and hounds had, I believe, crossed the lines, but the gates were shut before the whole of the field could pass, and Mr. Jefferies with others had to wait on the north side of the level-crossing. The lad in charge of a milk cart had tied up the horse and cart to one of the staples in the wall of the goods shed outside the gates and station boundary. For some reason or other the horse became restive, and breaking loose, bolted down the road with its cart. It dashed among the riders and knocked Mr. Jefferies down and killed him. This accident, though not attributable to the condition of the level-crossing, appears to be connected to a certain extent with the want of proper accommodation for milk carts. It does not appear to have been reported to the Board of Trade, as it occurred outside the station boundary, but it is referred to in the coroner's return of the fatal accident that occurred to Gerald Richings on the 25th June 1894. In this latter case the lad, while rolling an empty milk churn from the up to the down side of the line, was caught by an up express train and instantly killed. Full particulars of this accident were forwarded to the Board of Trade by the Company and by the coroner.

In addition to the above casualties, it is stated that on the 16th November 1891, a horse and cart, which had been left in the space between the main lines and sidings, got in front of an up express train, and were cut to pieces.

A great deal of correspondence has passed between the Faringdon Highway Board and the Great Western Railway Company since 1887 on the subject of Uffington station. Copies of the letters which have been written by the Highway Board, and an epitome of the Company's replies, were presented to me by Mr. Crowdy for the information of the Board of Trade. With reference to this, I would draw attention to

the letter from the Railway Company to the Board of Trade dated October 26th, 1893 (R. 11,888), in which it is stated "with respect to the remark made by the Jury" (who enquired into the death of Arthur Jennings, the porter who fell from the signal post) "'that the whole station is regarded as a very dangerous one, both for the public and "'for those travelling on the line,' this statement is of such a general character that "in the absence of more definite particulars, I am unable to deal with it." At the time this reply was sent to the Board of Trade, the company was in correspondence (and had been for six years) with the Highway Board on the subject of the dangerous and unsatisfactory condition of this station, and must have been fully aware of the "particulars" to which the jury referred. Viewed from the information, now laid before the Board of Trade, the letter just quoted would appear to be eminently unsatisfactory.

Uffington station was constructed and submitted to the Board of Trade for inspection at the same time as and in connection with the Faringdon branch. The inspecting officer, Colonel (then Captain) Rich, in his report dated April 13th, 1864 (R. 695), (copy of which I attach, Appendix E), raised objections to the level-crossing, both in regard to its length and to the absence of gates of sufficient size to fence the railway, to the two sidings which he found had been carried across the high road, and to the difficulty of access to the passenger station. For these reasons, and others more particularly relating to the Faringdon branch itself, he advised the Board of Trade to withhold its permission for the opening of the branch railway. In a second report dated 13th May 1864 (R. 970), he stated that both the sidings previously objected to had been removed, that the level-crossing gates had been brought close up to the main lines, that fencing had been constructed, and that proper access to the station was being arranged for, and on the strength of this report, permission was given by the Board of Trade for the opening of the branch.

I have not been able to ascertain when or by whom the sidings, which were taken up in order to meet Colonel Rich's objections, were replaced, but not only are those two sidings now in existence, but a third siding has been constructed, so that there are at the present time, as already stated, three sidings and two main lines crossing the public high road. The level-crossing also has been restored to the same dangerous condition which Colonel Rich refused to sanction, the fencing has been removed, and the approach to the station is now if anything worse than it was when Colonel Rich's first inspection took place.

This is a serious matter, and one which seems to require explanation. Whether the Faringdon Railway Company replaced the sidings, or whether this was done by the Great Western Railway Company, the fact remains that certain objectionable arrangements at this station, which were removed for the purpose of meeting the views of the Board of Trade and of obtaining their sanction to the opening of the branch railway, have subsequently been restored. The Faringdon Railway is now vested in the Great Western, and an explanation can therefore only be obtained from the latter.

I was informed by Mr. Allen, that the Great Western Railway Company have from time to time considered the question of improving the accommodation and level-crossing at Uffington station, but nothing definite has been decided upon. The correspondence between the Highway Board and the Company shows that from time to time hopes of a bridge have been held out, and there have been interviews between the representatives of the Board and the Company for the purpose of discussing the various proposals. The last move in the matter appears to have been made by the Company, who, in December 1893, enquired whether the Highway Board would be prepared to contribute towards the cost of a bridge, if such were constructed so as to abolish the level-crossing. To this the Board replied that they had no power to make any such contribution, but that they would give every assistance towards obtaining the land necessary for a bridge. Whereupon the Company replied that it was feared that the directors would not be disposed to consider the question further, and here for the present the matter rests.

I have no hesitation in saying that a bridge either under or over the lines is most urgently needed, and I am unable to agree with the suggestion of the Railway Company, that any portion of the cost of such a bridge should be borne by the Highway Board. The level-crossing in its present condition appears to be contrary to Act of Parliament, and if the Company are unwilling to erect such a bridge, they should, I submit, be called upon to provide forthwith "good and sufficient" gates of such dimensions as to fence the railway lines when closed across them. But a bridge will not remove all the evil complained of, as it is essential that the accommodation for milk and goods traffic should be improved, and that a proper approach to the

station without any crossing of sidings should be provided. If the Company do not see their way to making these necessary improvements, it becomes a question whether the station should not be restored to the condition in which it was, when passed by Colonel (then Captain) Rich.

Mr. Allen has informed me since my visit to the place, that he has given instructions for some fencing to be put up at once between the space occupied by milk carts and the main line, so as to give as much protection as possible when carts are being unloaded, and also that he is considering a plan for increasing the siding accommodation. This is satisfactory as showing a disposition on the part of the Company to do something, but a far more comprehensive scheme is required, before Uffington station can be made both safe and convenient, and this the Company should be pressed to undertake without any further delay.

I have, &c.,
H. A. YORKE,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

List of documents accompanying this report:—

A. Statement of milk and passenger trade at Uffington Station - -
B. Statement of trains passing - - - - - - -
C. Statement of particulars of shunting on 21st, 22nd, and 23rd July 1894 - - - - - - - -
D. Statement of fatal accidents during last 10 years - - -

} Supplied by the Great Western Railway Company.

E. Extracts from Captain (now Colonel) Rich's Reports, dated 13th April and 14th May 1864.
Plan of Uffington Station.

A.

STATEMENT of PASSENGER and MILK TRAFFIC at UFFINGTON STATION, shown in Daily Totals for the Week ending 21st July 1894.

Date. 1894.	No. of Passengers Booked.		No. of Full Cans Forwarded.	No. of Empty Cans Received.	Remarks.
	Up.	Down.			
July 16th - -	23	9	55	54	
„ 17th - -	7	7	57	55	
„ 18th -	7	5	55	57	
„ 19th - -	5	17	59	55	
„ 20th - -	10	17	57	59	
„ 21st - -	16	25	56	57	
	68	80	339	337	

B.

STATEMENT of TRAINS Calling at and Passing Through UFFINGTON STATION per Day at the Present Time.

No. of Passenger Trains Calling per Day.		No. of Goods Trains Calling per Day.		No. of Passenger Trains Passing per Day.		No. of Goods Trains Passing per Day.	
Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.
5	5	5	4	22	21	29	30

C.

STATEMENT giving particulars of any SHUNTING which has taken place at UFFINGTON STATION and which has interfered with the CROSSING, between 6 a.m. July 21st and 6 p.m. July 23rd.

Date.	Times. From.	Times. To.	Actual Time occupied.
1894.			Minutes.
July 21st -	6 15 a.m.	6 30 a.m.	15
	6 50 „	6 53 „	3
	7 30 „	8 0 „	30
	9 40 „	9 45 „	5
	10 16 „	10 20 „	4
	10 26 „	10 50 „	24
	11 6 „	11 9 „	3
	11 21 „	11 24 „	3
	5 16 p.m.	5 23 p.m.	7
	5 36 „	5 40 „	4
	5 43 „	5 46 „	3
Total for first 12 hours -			101
July 21st -	6 20 p.m.	6 34 p.m.	14
	7 53 „	7 56 „	3
	9 23 „	9 27 „	4
	10 45 „	11 8 „	23
July 22nd -	1 2 a.m.	1 5 a.m.	3
	1 14 „	1 17 „	3
	5 19 „	5 28 „	9
	5 55 „	5 58 „	3
Total for second 12 hours -			62
July 22nd -	6 4 a.m.	6 8 a.m.	4
	7 5 „	7 8 „	3
	7 24 „	7 27 „	3
	8 48 „	8 51 „	3
	9 10 „	9 13 „	3
	12 45 p.m.	12 48 p.m.	3
	4 37 „	4 41 „	4
Total for third 12 hours -			23
July 22nd -	6 45 p.m.	6 48 p.m.	3
	7 52 „	8 0 „	8
	8 16 „	8 20 „	4
July 23rd -	5 50 a.m.	5 54 a.m.	4
Total for fourth 12 hours -			19
July 23rd -	7 23 a.m.	7 26 a.m.	3
	7 30 „	7 40 „	10
	8 20 „	8 25 „	5
	8 35 „	8 38 „	3
	9 40 „	9 50 „	10
	10 26 „	10 34 „	8
	10 52 „	11 0 „	8
	11 14 „	11 17 „	3
	12 6 p.m.	12 10 p.m.	4
	3 50 „	3 53 „	3
	5 5 „	5 10 „	5
Total for fifth 12 hours -			62

D

STATEMENT giving particulars of any FATAL ACCIDENTS which have occurred at UFFINGTON during the past 10 years.

Date of Accident.	Name.	Particulars of Accident.
April 1st, 1893 -	Edward Jeffries - - -	In consequence of there not being room for all the milk carts to stand inside the crossing gates, it is the practice for some of the lads to unload their milk and take the carts outside the gates. In this case the lad in charge of Mr. Sharpe's horse and cart, tied the horse to a staple in the goods shed wall, outside the gates and in the highway, while he fetched his empty cans. At the same time the huntsmen and hounds came along, and the horse became restive and bolted along the road knocking down Mr. Jeffries.—*Reported April 25th*, 1893.
June 25th, 1894 -	Gerald Richins - -	This lad, aged 16 years, had brought milk to the station, and while rolling an empty milk churn over the level crossing from the "Up" to the "Down" platforms, was struck by engine of 6.55 a.m. *ex* Swindon.—*Reported June 26th*, 1894.

E.

EXTRACT from Captain RICH's report of his inspection of the Faringdon Railway, dated 13th April 1864, (R. 695 of 1864).

"The public road from Uffington by Moor Mill to Faringdon crosses the Great Western Railway on the level close to Uffington junction. The goods shed for the Faringdon Railway, and two lines of rails for goods have been laid across the public road, making the crossing over the rails of the Great Western and Faringdon Railways, about 70 yards long without any protection for passengers or carriages. There are no gates to close across the railway, and no lodge for the man in charge.

"This extensive level-crossing is most objectionable, as herds of sheep and cattle are driven across on market days, and there is nothing to prevent them taking fright and running away down either lines of rails.

"The approach for passengers to the junction station is also over this level-crossing, which is most objectionable, and if not removed altogether, should be enclosed and defined with gates and fencing, so that they may have some protection, and guide to the platform.

* * * *

"I submit that the Faringdon Railway cannot be opened for passenger traffic without danger to the public using the same, by reason of the incompleteness of the works above enumerated."

EXTRACT from CAPTAIN RICH's report of his re-inspection of the Faringdon Railway, dated 14th May, 1864. (R. 970, 1864).

"The two additional lines of rails which were laid as goods sidings across the public road near Uffington junction have been taken up on the crossing, and the fencing of the public road is continued nearly up to the two lines of rails of the Great Western Railway, which are now the only ones crossing the public road, which has a gate across it.

The approach to the junction station at Uffington is now arranged to be from the north side of the Great Western Railway from outside the gate across the public road, and it is fenced off from both lines of rails. This fencing was not quite finished, but the men were at work at it, and it would probably be completed this evening * * * *
I beg therefore to submit that the Faringdon Railway may be opened for passenger traffic, &c., &c.

RAILWAY ACCIDENTS.

HIGHLAND RAILWAY.

REPORT

TO THE

BOARD OF TRADE

BY

MAJOR MARINDIN, R.E., C.M.G.,

UPON THE

CIRCUMSTANCES ATTENDING THE ACCIDENT THAT OCCURRED ON THE 27TH APRIL 1894 TO A PASSENGER TRAIN

AT

DUNPHAIL STATION.

Presented to both Houses of Parliament by Command of Her Majesty.

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HIGHLAND RAILWAY.

Board of Trade, (Railway Department,)
8, Richmond Terrace, Whitehall, London, S.W.,
May 5th, 1894.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 28th ultimo, the result of my enquiry into the circumstances attending an accident which occurred on the 27th ultimo at Dunphail station on the Highland Railway.

In this case, as the 12.40 a.m. down passenger train from Perth (consisting of engine and tender, horse-box, two fish-waggons, brake-van, one composite and one third-class carriages, Pullman sleeping-car, two luggage-vans, and brake-van) was entering the loop at Dunphail at 4.52 a.m., the composite carriage left the rails at the facing-points and ran along the up loop, pulling the front brake-van off the rails, so that it was upset against the south end of the down platform and was broken up, and itself coming to a stand across the up loop and the 6-ft. way, about half its length north of the van. The engine and the three leading vehicles broke loose from the brake-van and came to a stand on the down loop, about 20 yards ahead of the van; the third-class carriage had its leading bogie in the 6-ft. way, and the rear wheels of the trailing bogie off the rails; and the other vehicles remained upon the rails of the down loop. The only couplings which parted were those at both ends of the front brake-van.

One passenger, who was riding in the third-class carriage, was injured.

The only vehicles damaged were the front brake-van, and the composite and third-class carriages.

The permanent-way for a distance of three miles was found to have been damaged by a wheel which had been running off the rails, breaking no less than 1,712 chairs and other material.

A return of the damages to rolling-stock and permanent-way is given in the appendix.

Description.

Dunphail station, 33¼ miles south of Inverness, 6¼ miles north of Dava station, and 14¾ miles north of Grantown, is a passing station on a single line, with a loop 585 yards in length, and is approached from the south through a cutting. The line at the south loop points is upon a 45-chain curve to the right looking northwards, and upon a gradient of 1 in 105 falling northwards, which gradient changes to 1 in 300 through the station.

Approaching from the south the line, from a point four miles south of the south loop points, is upon falling gradients of 1 in 70, 1 in 74, 1 in 70, and 1 in 124 for nearly 3¼ miles, and then upon gradients of 1 in 500, 1 in 300, and 1 in 105 for the remainder of the distance.

At three miles south of the loop-points there was found the first broken chair, and here the line is on a low embankment, on an 80-chain curve to the left, and on a gradient of 1 in 70 falling northwards. At about two-thirds of the distance from this point to the station the line passes over the Divie Viaduct, which is about 160 yards in length, with an extreme height of 100 feet from the bed of the river. On the viaduct the line is straight, and on gradients of 1 in 70 and 1 in 124, falling northwards, but south of the viaduct, where it is on an embankment 60 feet in height, it is on a 52-chain curve to the right, and on a falling gradient of 1 in 70, the low rail of the curve being fitted with a check-rail. This portion of the railway was opened in August 1863, and was relaid in 1884–85 with the following permanent-way:—

1. Bull-headed steel rails, weighing 77 lbs. per yard, and mostly in 30-feet lengths.
2. Cast-iron chairs, weighing 37½ lbs. each.
3. Wrought-iron spikes, two to each chair.
4. Steel fish-plates, weighing 20 lbs. per pair.
5. Steel fish-plate bolts, weighing 1½ lbs. each.
6. Transverse Scotch fir and larch sleepers, 9 feet in length and 10 ins. by 4¾ ins. in section, placed 3 feet from centre to centre on the average.
7. Outside teak-wood keys.
8. Gravel ballast.

Evidence.

James Robb, states: I have been in the service for nearly 32 years, and a guard for over 30 years. On the 26th April I came on duty at Perth at about 11 p.m. to work till about 7 a.m. on the 27th. On the 26th April I had left duty at Perth at 7.30 a.m. I was guard of the 12.40 a.m. down passenger train on the 27th. It was made up as follows, viz.:—Engine and tender, horse-box, two empty fish trucks, brake-van, composite, third-class, Pullman car, two luggage-vans, and brake-van. I was riding in the rear brake-van, and the second guard was in the front van as far as Kingussie. At Kingussie he changed into my van. He came to my van because he had missed a parcel, and came to inquire about it, and he remained there. I did not think of making him go back to his own van. There was an automatic vacuum-brake working all through the train, except on the two fish trucks which were piped. There was no communication cord on the train. The brake-van was not fitted with a wheel for a cord. This is the van always used with the train. The train started at the right time, and kept time pretty well all the way. We left Grantown at 4.17 a.m., one minute late. We ran at our usual speed past Dava, and I knew of nothing wrong until just before we stopped at Dunphail. On leaving Grantown we had from 18 to 20 inches of vacuum, but the driver was working the brakes down the line soon after passing Dava. We came through Dava without checking. I think the brake was put on about where the marks were found of a wheel running off the rails, but cannot be sure. The train was checked as usual for stopping at Dunphail. The first unusual thing which I observed was the stopping of the train before the whole of it was on the down loop. As soon as we stopped I got out, and went forward. I found the engine, tender, and the first three vehicles on the rails of the down loop, about two carriage lengths ahead of the brake which was upset against the end of the platform, completely wrecked, so far as the body was concerned. The composite carriage, which had been next behind the van, was off the rails across the up loop and the 6-ft. way, and about half its length north of the van. It was not upset. The next carriage, a third-class, had the leading bogie on the 6-ft. way, and the rear wheels of the trailing bogie off the rails. The other vehicles were on the rails of the down loop. The only couplings parted were those at both ends of the front van. I found that one of the wheels of the composite carriage was in below the carriage. It was the right hand leading wheel. The brake, going on suddenly when the couplings parted, was really the first thing which called my attention to anything being wrong. Our speed at that time would have been about 10 miles an hour. There were, I should say, 17 or 18 passengers in the train. Only one complained of injury, a lady riding in the front compartment of the third-class carriage. She complained of her side, but had no bones broken. She was going to Novar, and went forward by the first relief train at about 8 a.m. There was one passenger in the second compartment of the composite from the front, and two in the fifth. I spoke to the passengers. The one in the second compartment told me he had been looking for a bell-cord, but could not find one. He did not say for how long he had been looking. It was a fine night. This train never has a communication cord when I am working it. The brake-van is a goods brake-van. The accident happened at 4.52 a.m.

John McLennan, states: I have been in the service for about 23 years, and a guard for several years. I cannot remember how many. On the 27th April I was working as assistant-guard with guard Robb, with whom I had come up from Inverness on the night of the 25th. I have heard guard Robb's evidence read over, and it is correct. The reason that I left my own van at Kingussie was that I was a parcel short, and went to inquire about it. I did not think of going back to my own van afterwards as things were going all right. I am not sure that I would have applied the continuous brake even if I had been in my van, and had discovered that the wheel was off the composite carriage. There are no instructions as to how the continuous brake is to be used by the guard under such circumstances. I know Rule No. 198.

John Bowie, states: I have been 25 years in the service and a driver for 10 years. On the 26th April I came on duty at Perth at 10.45 p.m., to take the night train to Inverness, due at 6.10 a.m. I had left duty at 4.30 a.m. on the 26th April. My engine (No. 71) is an eight-wheeled engine, with leading bogie, and the other wheels coupled. The tender has six wheels. The engine was in good order, and was fitted with the automatic vacuum-brake. I was attached to the 12.40 a.m. train, which consisted of 10 vehicles equal to 12, all but two having the brake working upon it. I was approaching Dunphail at my usual speed, prepared to stop at the platform, with the hand-brake only slightly on, when the vacuum-brake went suddenly on and pulled up the train. I got off and went back to see what was the matter. I found the engine, tender, and the three leading vehicles parted from the rest of the train, which was in the position described by guard Robb. About 20 minutes afterwards I went back along the line, beyond the viaduct, and found that a number of chairs on the left side had been broken by a wheel running off the rails. There were also marks every 20 or 30 yards on the ballast near the middle of the 4-ft. way where a wheel had been running. When I came back to the train I found this wheel with the boss out on the axle at the leading end of the composite carriage, which was badly damaged on its left side. I had been running with 21 inches of vacuum on both gauges. I did not use my brake at Dava. I shut off steam about a mile south of Dava. I checked my train down the bank with my hand-brake, and did not apply the vacuum-brake at all until after passing over the viaduct. My speed over the viaduct was 35 miles an hour at least, and I was running up to the platform at a speed of about 10 miles an hour. I had my continuous brake on slightly until half-way between the distant and home-signal, when I released it and came in with the hand-brake.

James Bowie, states: I have been over 10 years in the service and a fireman for about five years. On the 26th and 27th April I was working with driver John Bowie. I have heard his evidence and it is correct.

James Fraser, states: I am permanent-way inspector in charge of the line from Dalcross to Boat of Garten. On the 27th instant I arrived at Dunphail at about 7.30 a.m., after hearing of the accident at Forres. I set the men to work to get the road put right. I telegraphed from Forres to the squad at Dava to come down the line with the trolley and report what was wrong. They arrived at Dunphail about the same time that I did. They told me a lot of chairs were broken, but that the road was in good line. At about 2 p.m. I went back with an engine towards Dava, and that was the first time that I made a personal examination of the road. The most southerly mark of anything wrong that I found was at a point nearly exactly three miles south of Dunphail. At this point a chair under the left rail was broken by a wheel flange dropping off inside the rail. The first mark on the right side was about 12 yards north of the first mark on the left. This was a mark on the sleeper. Between this point and Dunphail there were a great number of broken chairs on the

left side, but only in one place two successive chairs. There were only two chairs broken on the right side, but there was a mark all the way down of a second wheel running along the 4-ft. way, from a foot to 15 inches inside the right rail. The line all the way was in good order and true to gauge. The men had not been working at this point for nearly six weeks.

William Coutts, states: I am travelling inspector in the locomotive department. On the 27th April I heard of the accident at about 6.20 a.m. at Inverness, and went to Dunphail with the 10.10 a.m. up train, arriving there at about 11.30 a.m. I made an examination of the train. The following vehicles were damaged:—No. 32 brake-van, which was on its side at the south end of the platform, body smashed. No. 30 composite carriage, left side of body and two corners broken, and the right leading wheel off its boss. This wheel had evidently been running for a considerable distance threaded on the axle, the centre of which was polished. The boss had been torn out, no woodwork remaining attached to the boss-rings, and the woodwork remaining attached to the tyre was torn and distorted. There were three out of the eight boss-ring bolts missing. No. 130 third-class bogie-carriage, three uprights broken, and some glass broken. I then walked from Dunphail to Dava, starting at about 1.30 p.m. I found traces on the road of a wheel running inside the left rail, and breaking a great number of chairs; and another wheel running in the 4-ft. way some distance inside the right rail, and marking sleepers at intervals. The marks extended for about three miles towards Dava. The permanent-way at the point where the most southerly mark was found was in good order. Between this point and Dava, about 3½ miles, I picked up a number of splinters of teak-wood, evidently from the damaged wheel. One mile south of the first mark I picked up one of the missing bolts a good deal bent. It was outside the right rail. The other two bolts have not been found. On the 30th April I walked from Dava to Grantown, and picked up several more splinters for the first mile after leaving Dava. South of this there were a few very small splinters, which I think must have belonged to this wheel. The station-master at Dava told me that he had found a number of splinters at and near Dava station, and that he had sent them to Inverness. The last place at which the wheel would have been examined was at Kingussie. It would also have been examined at Blair Atholl, and at Perth before starting. I do not remember when this carriage was last in the shops. The woodwork is perfectly sound and not at all rotten. I could not see from the look of the boss whether any bolts can have been out for any length of time. A previous case, the only one on record in the Highland Railway, of a boss being torn out, happened at Novar several years ago. In this case I traced the damage to the wheel back to Invergordon.

James Tosh, states: I am waggon-lifter in the service of the Highland Railway Company. I have been between 10 and 11 years in the service; all the time at Perth. During the day I am employed in the locomotive shops at Perth, but it is part of my duty to examine the passenger vehicles of the 10.30 p.m. up train from Inverness on its arrival at 7 a.m. My hours of duty are from 6 a.m. to 5.30 p.m. with two hours off for meals. On the morning of the 26th April I made a careful examination of the passenger vehicles of this train, which are the same which went out as the 12.40 a.m. train on the 27th April. There were two passenger carriages, a Pullman car, two luggage-vans, and two brake-vans. One of the passenger carriages was No. 30 composite carriage. I carefully examined the wood work of the wheels of this, among the other carriages, and the iron work, tapping the tyres. There was no sign of any looseness in the wood work, and if there had been I do not think I could have failed to detect it. I saw the wheels turning as the train came in and am sure that no boss-ring bolt was missing. This train is put away at Perth during the day, and is brought out to make up the 12.40 a.m. train. It is not again examined before this train departs. I examined the train after it had come to a stand, as well as when it was running in.

Conclusion.

The partial derailment of the composite carriage, the fifth vehicle in this train, which led to its total derailment at Dunphail, to the upsetting of the brake-van in front of it, and to the derailment also of the third-class carriage behind it, clearly took place at a point three miles south of the south loop-points at Dunphail, at which point a chair under the left rail was found to have been broken by a wheel-flange dropping off inside the rail. On the right side the first mark on the permanent-way was upon a sleeper 12 yards north of the first broken chair, but from this point to Dunphail there were distinct marks of a wheel running along the 4-ft. way from 12 inches to 15 inches inside the right rail, while over 1,700 chairs were broken, a great number chipped, and other damage done by a wheel-flange running over the chairs inside the left rail.

There is no difficulty in arriving at a conclusion as to the cause of this first derailment, for an examination of the train after the accident showed that the boss of the right leading wheel of the composite carriage had been twisted out of the woodwork, so that this wheel was threaded on to the axle under the carriage, and as a natural consequence the left wheel dropped off inside the rail. There can be no doubt that the breaking up of the woodwork commenced before the train reached Dava, for splinters of wood were found all the way back to a point a mile south of Dava, and some very small ones even south of that.

The wheel in question, which is 3 ft. 7 ins. in diameter, is of the pattern known as a Mansell wheel; it was made by Messrs. Vickers and Son in 1872, was retimbered by the Highland Railway Company in 1893, and had the tyre turned up in April 1893; while the carriage was also in the shops for slight repairs so late as December 1893.

The tyre is steel, and the portion of the wheel between the tyre and the boss is composed of 16 radiating sections of teak-wood, 3½ inches thick, and 14¼ inches in length. These sections are tightly packed, and are secured to the tyre by two circular

wrought-iron rings, one inside and one outside, hooked into notches on the tyre, and bolted by 16 three-quarter inch bolts passing through the plates and the woodwork, with nuts on the inner side. At the centre the woodwork is secured to a circular casting, forming part of the boss, by eight one-inch wrought-iron bolts, which pass through the casting, the woodwork, and a cast-iron ring on the inside of the wheel, the nuts being on the inside.

Three of the boss-ring bolts were missing, but one has been picked up much bent, and from the appearance of the boss and boss-ring I have no doubt that the other two bolts were in position until the wheel began to break up.

It is not easy to account for the failure of this wheel, but probably it commenced by one of the bolt-holes becoming enlarged by wear, so that a certain amount of play was set up, and was increased by every application of the brake, until at last one of the sections began to splinter, and the whole centre of the wood work was gradually cut out by the action of the boss-ring bolts, whenever the revolution of the tyre was affected by the action of the brake-blocks, or otherwise. The woodwork remaining attached to the tyre was quite sound and firm, none of the splinters found were at all rotten, and the other wheel on the axle was in perfectly good condition.

The wheel, with the others in the train, was carefully examined at Perth when the carriage arrived there on the morning of the 26th April, and on the down journey on the morning of the 27th it was examined in the usual manner at Blair Atholl, and at Kingussie, where, however, the examiner had not time to go all round the train, and only the wheels on the right side were examined. It is stated that there were no signs of looseness in the wood work at Perth, and it is probable that if there had been any when the train reached Blair Atholl it would have been detected there even by the less critical examination which a train receives when on its journey.

I do not attribute the accident to any neglect of duty on the part of those entrusted with the examination of the train, although it is possible that if more time had been available at Kingussie, some signs of failure might have shown themselves there.

The accident is one of a very unusual character, and the last of the kind recorded was in 1881, but still, looking at the very terrible consequences which may follow the failure of a wheel, and in this case would have been almost inevitable if the wheel which failed had been the left wheel instead of the right wheel, and at the fact that since the introduction of continuous brakes the strain upon carriage wheels has been much increased, it is clear that too much care cannot be taken to make these wheels as strong as possible.

The Highland Railway are now placing eight additional bolts at the boss of their wheels, but it would probably be well to still further strengthen them by some direct connection between the boss and the circular rings attached to the tyre, or by altering the form of the boss so as to still further increase the bearing surface for the inner ends of the teak blocks, or by adding safety clips on the bolts, all of which safeguards against the twisting out of the boss have been found useful.

In conclusion I must call attention to two points in connection with this accident :

1st. To the fact that, according to the rules, the assistant guard ought to have been riding in the front brake-van, and had no business to remain in the rear-van, after going there to make some inquiry about a parcel at Kingussie, and that in all probability he would, if he had been in his own van, have detected the derailment of the carriage next behind him very soon after it ocurred, when he might have pulled the train up by applying the continuous brake, or have attracted the driver's attention by slightly applying it. Guard Robb and guard McLennan, who were both in fault in this respect, had at the time been on duty for about six hours.

2nd. To the absence of any communication cord between the carriages and the engine and brake-van of the train.

By section 22 of the Regulation of Railways Act, 1868 it is enacted that a railway company "must provide and maintain in good working order, on every train worked "by it, which carries passengers and travels more than 20 miles without stopping, "such efficient means of communication between the passengers and servants of the "Company in charge of the train as the Board of Trade may approve," and, as this train travels from Blair Atholl to Dalwhinnie, a distance of 23½ miles, without stopping, the absence of any means of communication, which absence, according to the evidence, is habitual with this train, is a clear breach of the law.

The passengers in the composite carriage must have become aware of the failure of the wheel long before they reached Dunphail, one of them, at any rate, having tried to find the communication cord in order to pull up the train, and if there had been a cord it is very improbable that the train would have run for three miles before being stopped.

It is most providential that no worse consequences followed the break down, for if it had taken place south of Dava, as it might well have done, judging from the position in which some of the splinters were found, the train would almost certainly have run off at the facing points at Dava when travelling at a high rate of speed instead of when pulling up to stop at Dunphail; while, if the wheel which failed had been the left wheel instead of the right wheel, the right wheel would have been the one to drop off inside the rail, in which case it must have struck the check rail south of Dava Viaduct, and have thrown the train off when running at considerable speed upon a high embankment.

I have, &c.,
F. A. MARINDIN,
Major, R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

COPIES of REPORTS on HIGHLAND RAILWAY COMPOSITE CARRIAGE, No. 30, which caused accident at Dunphail on 27th instant.

Sir, Inverness, 30th April 1894.

I beg to say that I examined the above on arrival of 12.40 a.m. train from Perth on 25th instant, and found wheels correct.

Your obedient Servant,
(Signed) GEORGE HENDERSON.

Mr. Conner, Inverness.

Locomotive Department,
Dear Sir, Forres, 30th April 1894.

My inspector had no complaints made to him, and he did not see any of the wheels showing signs of being slack at the boss when this carriage passed here by the 10.30 p.m. train on the 25th instant.

Yours truly,
(Signed) A. MACKENZIE.

D. Jones, Esq., Inverness.

Locomotive Department,
Dear Sir, Perth, 28th April 1894.

In reference to attached, Jas. Tosh, our waggon-lifter, who examined this and the other vehicles comprising the 10.30 p.m. up train of 25th instant, which arrived here about 7 a.m. on 26th instant, informs me that he did not observe anything wrong either in the sound in tapping the wheels or any appearance of looseness of wheel-timber.

Yours truly,
(Signed) THOS. JAGGER.

Mr. W. Coutts, Inverness.

COPIES of REPORTS from CARRIAGE and WAGGON INSPECTORS at Blair Athol and Kingussie.

Locomotive Department,
Dear Sir, Blair Athol, 3rd May, 1894.

With reference to 12.40 a.m. train of 27th ultimo, I went round all the train, tapped all the wheels, and examined all the axle-boxes, and found nothing wrong.

Your obedient Servant,
(Signed) JOHN SINCLAIR,
Carriage Inspector.

D. Jones, Esq, Inverness.

Locomotive Department,
Sir, Kingussie, 4th May, 1894.

I beg to inform you that I examined the 12.40 a.m. down train on 27th April. I commenced at engine on right side with lamp in hand.

I tapped wheels and examined journals, came to rear of guard's van on platform side, but had no time for tapping wheels on the left side. I did not observe anything wrong as far as I examined.

Yours obediently,
(Signed) ALEX. CAMPBELL,
Cleaner.

D. Jones, Esq., Inverness.

DAMAGES to ROLLING STOCK.

Highland Railway passenger brake-van, No. 32.—Body smashed, one axle bent, brake-gear broken, and other iron-work bent and damaged.

Highland Railway composite carriage, No. 30.—One wheel, three axle-boxes, uprights, and side panels broken.

Highland Railway third-class carriage, No. 130.—Several uprights and side panels broken, body damaged on one side, some glass broken.

DAMAGE TO PERMAMENT-WAY.

One rail, 30 feet, broken; 3 rails, 30 feet, bent and twisted; 1,692 chairs, 37½ lbs., broken; 2,000 chairs, 37½ lbs., chipped; 20 check-chairs broken; 3 crossing chairs broken; 4 point connecting-rods broken; 600 keys destroyed; 4,000 spikes heads off; 500 sleepers broken: 2,000 sleepers marked by flange of wheel.

RAILWAYS (ACCIDENTS TO RAILWAY SERVANTS OTHER THAN TRAIN ACCIDENTS).

RETURN to an Order of the Honourable The House of Commons, dated 10 April 1894;—*for*,

RETURN "showing for each Year from 1884 to 1893, inclusive (1) the Number of RAILWAY SERVANTS KILLED by ACCIDENTS in which the movement of VEHICLES used exclusively on RAILWAYS was concerned; and (2) the Number of Instances in which such FATAL ACCIDENTS to RAILWAY SERVANTS have been Investigated by INSPECTORS of the BOARD OF TRADE."

Board of Trade, 13 June 1894.

COURTENAY BOYLE.

RETURN showing for each Year from 1884 to 1893, inclusive (1) the Number of RAILWAY SERVANTS KILLED by ACCIDENTS in which the movement of VEHICLES used exclusively on RAILWAYS was concerned; and (2) the Number of Instances in which such FATAL ACCIDENTS to RAILWAY SERVANTS have been Investigated by INSPECTORS of the BOARD OF TRADE.

YEAR.	(1.) Number of Railway Servants Killed.	(2.) Number of such Fatal Accidents Investigated by Inspectors of the Board of Trade.
1884	523	—
1885	438	—
1886	421	—
1887	414	3
1888	389	1
1889	451	1
1890	487	—
1891	537	2
1892	525	—
1893	450	1
TOTAL	4,615	8

Board of Trade, Railway Department.

RAILWAYS (ACCIDENTS TO RAILWAY SERVANTS OTHER THAN TRAIN ACCIDENTS).

RETURN showing for each Year from 1884 to 1893, inclusive (1) the Number of RAILWAY SERVANTS KILLED by ACCIDENTS in which the movement of VEHICLES used exclusively on RAILWAYS was concerned; and (2) the Number of Instances in which such FATAL ACCIDENTS to RAILWAY SERVANTS have been Investigated by INSPECTORS of the BOARD OF TRADE.

(*Mr. Channing.*)

Ordered, by The House of Commons, *to be Printed*,
15 *June* 1894.

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166.

GENERAL REPORT

TO THE

BOARD OF TRADE

IN REGARD TO THE

SHARE AND LOAN CAPITAL, TRAFFIC IN PASSENGERS AND GOODS

AND THE

WORKING EXPENDITURE AND NET PROFITS FROM RAILWAY WORKING

OF THE

RAILWAY COMPANIES

OF THE

UNITED KINGDOM,

For the Year 1893.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

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CONTENTS.

REPORT to the Secretary of the Board of Trade:— Page

Capital - 3
Traffic and Receipts - 5
Working Expenditure - 11
Net Earnings and Dividends - 15
Summary - 18

APPENDIX.—Tables:—

No. 1. Length of railways open for traffic - 21
2. Amount of ordinary, guaranteed and preferential, and loan capital, and proportion per cent. of each to the total capital - 21
3. Amount and average rate of dividend on each description of capital - 21
4. Statement showing the various Rates of Interest or Dividend paid on Capital in 1893, and the Amounts on which each rate was paid - 22
5. Statement of the amounts by which the capitals of the railway companies have been nominally increased on the conversion, consolidation, and division of their stocks - 23
6. Total railway receipts and expenditure, and net receipts from railway working, and per-centage proportion of expenses to receipts, and of net receipts to total share and loan capital - 24
7. Amount of receipts from passenger and goods traffic, with the amount and rate per cent. of increase of each year over the previous year - 25
8. Comparison of number of passengers, number of season ticket holders, and tonnage of goods and minerals conveyed - 26
9. Comparison of number of miles travelled by passenger, goods, and mixed trains - 27
10. Comparison of receipts:—
I. From each class of passenger traffic - 28
II. From each class of goods traffic and proportion of receipts from passenger and goods traffic - 29
11. Comparison of Railway Working Expenditure, specifying the amounts under each head of outlay - 30
12. Comparison of receipts from each class of passenger and goods traffic per mile of open railway - 32
13. Comparison of total receipts from passenger traffic and from goods traffic per train mile and per mile of open railway - 33
14. Comparison of each item of expenditure per train mile and per mile of open railway:—
I. Working expenditure per train mile - 34
II. Working expenditure per mile of open railway - 35
15. Comparison of receipts per train mile, and proportion per cent. of expenditure to receipts, of the principal railway companies - 36
16. Comparison of expenditure per train mile of the principal railway companies - 38
17. Comparison of the total number of locomotives, carriages, and other vehicles owned or hired by the railway companies, and of the number thereof per mile of open railway - 42
18. Expenditure by certain railway companies in the years 1889 to 1893 on wages in their principal departments, together with the cost of coal and coke, and materials used in repairing and renewing locomotives, &c. - 44

To the Secretary of the Board of Trade.

Sir,

The "Railway Returns" for 1893 having lately been published we are now in a position to submit to you our report on the capital, traffic, and working expenses of the railway companies of the United Kingdom for last year. As we have formerly had occasion to remark it is to be regretted that we are unable to make our report on these subjects at an earlier period. The facts and figures we have to refer to are necessarily dependent on the completion of the annual returns laid before Parliament, and as, in some instances, individual returns for last year were not supplied to the Board of Trade until considerable pressure was brought to bear on the particular companies in default, with consequent delay, it has unfortunately been found impossible to accelerate the preparation of the statistical matter upon which we have to comment.

In concluding the report which we submitted a year ago as to the facts established by the figures of 1892 we observed that the great coal dispute which was in progress when that report was written could not fail to exercise an injurious influence on the traffic returns for 1893, and it is of course well known that that dispute did in fact have a serious effect on the traffic and revenue of the railway companies both directly as resulting from the diminution which it caused in the actual carriage of coal, and indirectly on account of its influence upon industries other than coal mining itself. The annual railway returns have not for many years shown such unsatisfactory net results as those which we have now to place before you. The heavy fall which occurred in the receipts from goods traffic during the year will be seen to have much more than outweighed the slight increases in revenue from passengers and from miscellaneous sources, and the working expenditure having remained virtually stationary in amount, the net earnings of 1893 as compared with the previous year show a decline of nearly 1,500,000*l*., equivalent to a fall of about 4 per cent. on the net earnings of 1892. Moreover, as we shall presently see, the capital of the companies was considerably increased during last year, and it follows from this that a still heavier percentage decline is to be noticed in the proportion of the net earnings to the total capital returned as paid up. It is also to be observed that the decline in the proportion of net earnings to capital is in continuation of a decline which has now been in progress for four years. The principal cause of last year's fall is doubtless to be looked for in the great dispute in the coal trade above referred to, and as we shall have occasion to notice later on, the detrimental effects of this dispute on railway traffic and earnings are clearly traceable in the returns.

Looking at the figures brought out by the returns and the tables which have, as usual, been computed therefrom (*see* Appendix), and taking first those relating to—

Capital

We notice that the total amount returned as being paid-up at the end of last year exceeds 970 million pounds. This is an increase of about 27 millions over the total at the end of 1892, and this increase, if it could be taken without qualification, is larger in amount than any which has occurred for nearly 20 years. But as has now been the case for a considerable period a large portion of the increase shown in the total capital is merely nominal, being in fact due to operations in the nature of conversion and consolidation of stocks. The amount of these nominal additions for 1893, indeed, accounts for nearly 10 millions of the total increase of 27 millions, so that the real increase of capital which occurred cannot be put at more than about 17 millions for the year. The following is a table giving particulars of the amounts of capital returned as paid-up at the end of each of the last 10 years, and the increase in each year as compared with the previous year, to which information we have added, as far as we are able, the amounts

included in those increases which may be looked upon as of a nominal character only :—

Year.	Total Amount of Capital.	Increase in each Year.		
		In Total as Returned.	Due to *Nominal* Additions.	Amount of Real Increase.
	Mln. £	Mln. £	Mln. £	Mln. £
1884	801·5	16·5		
1885	815·9	14·4		
1886	828·4	12·5	Complete information not obtained for these years.	
1887	846·0	17·6		
1888	864·7	18·7		
1889	876·6	11·9		
1890	897·5	20·9	6·0	14·9
1891	919·4	21·9	7·1	14·8
1892	944·3	24·9	4·0	20·9
1893	971·3	27·0	10·0	17·0
Average annual increase -		*18·6	†6·8	†16·9

* For the ten years 1884 to 1893. † For the four years 1890–93.

We may mention that nearly the whole of the merely nominal increase of 1893 was brought about by the conversion of the debenture stocks of the London and North Western Railway Company, 9¼ millions out of the total amount of 10 millions shown by the table under this head being due to the cause mentioned.

It may be interesting as bearing on this question of the extent to which capital has been nominally swollen without any real addition having been made, to quote, from Table No. 5 in the Appendix, the figures showing the amounts of the several descriptions of the capital of the companies at the end of last year and the amounts of the merely nominal additions occasioned by consolidations and conversions which are included in those amounts. The figures are as follows :—

——	Ordinary Stock.	Guaranteed and Preferential Stock.	Loans and Debenture Stock.	Total.
	Million £	Million £	Million £	Million £
"Paid-up" capital - -	354·3	350·7	266·4	971·3
Amount included in above, representing nominal additions on the consolidation, conversion, and division of stocks	25·9	27·8	24·4	78·1

From this it appears that about 8 per cent. of the total capital returned as paid-up partakes more or less of the character of simple "watering," the ordinary capital being swollen by these nominal additions by 7 per cent., the guaranteed and preference by 8 per cent., and the loans and debenture stocks by 9 per cent.

Taking the figures of paid-up capital as they stand, however, we find that for 1893 ordinary capital shows an increase of 6,500,000*l.*, guaranteed and preference an increase of 5,200,000*l.*, and loans and debenture stock of 15,300,000*l.*; but while the two first named descriptions have not been appreciably affected by merely nominal additions, the increase in loans and debenture stocks during the year would be about 5,800,000*l.* only instead of 15,300,000*l.* if these were excluded. The proportions which the different descriptions of capital bore to the total paid-up at the end of the year remain the same as in 1892, viz., 37 per cent. for "ordinary," 36 per cent. for "guaranteed and preference," and 27 per cent. for "loans and debenture stocks."

A reference may here be made to the Table No. 3 in the Appendix, which shows the gross amounts and average rates of dividend or interest paid on each class of capital for each of the last ten years. As usual the figures given have been computed from the rates actually paid by the different companies and the amounts of capital upon which each rate was paid, but, as has been remarked in former reports, owing to the fact that some companies have invested portions of their capital in the stocks and shares of other companies, the figures so arrived at are somewhat in excess of the true amounts. The difference between the amounts of dividend and interest computed as having been paid

and the actual net earnings of the year is considerable, and amounts in fact to 1,400,000*l.*, but as the computations referred to are made on the same basis throughout, and any qualification as to excess over actual net earnings would apply almost equally in each year, the table still remains valuable for comparative purposes. It will be seen from the figures, then, that taking all classes of capital together, the average rate computed to have been paid was higher in 1889 than in any of the ten years for which particulars are given, and that in that year the rate was 4·32 per cent. In 1890 it declined by ·08, in 1891 by ·14, in 1892 by ·12, and in 1893 by a further ·24. The whole reduction in the average rate in the last five years has therefore been ·58, which on the rate of 4·32 of 1889 is equivalent to a fall of 13 per cent. For the last three years, too, the table shows a reduction in the total amounts computed as paid, as well as in the average rate, although, as noticed above, there had been considerable additions to the capital upon which these computed amounts of dividend fell to be distributed. As was the case in 1892 and 1891, the decline in average rate last year was not exclusively confined to ordinary capital, other classes having also suffered some apparent reduction, although as in 1892 the class most adversely affected was naturally the "ordinary." The effect of the non-expansion of the net earnings of the railway companies during the last few years, aggravated as it was by the temporary dislocation of business brought about by last year's coal dispute, is clearly to be seen from the figures as to ordinary capital in the table to which we have referred. These figures show that for the four years from 1888 to 1891 inclusive, the computed average rate of dividend on "ordinary" was larger than that on either of the other groups of capital, and as would naturally follow, larger than that on all classes of capital taken together. In 1892 the rate for ordinary declined to exactly the same level as that for the total capital of all kinds, viz., 3·98 per cent., while for 1893 not only was the ordinary capital average lower than the average for either of the other classes, but it was also lower than it had been in any year of the past decade. It further appears that while in 1889 the amount computed as having been paid in dividends to ordinary shareholders was 15,210,000*l.*, their average rate being 4·66 per cent., the corresponding amount for 1893 was only 12,400,000*l.* This is a reduction of 2,810,000*l.*, or nearly 18½ per cent., and it has to be recollected that this reduced sum for last year had to be distributed over an amount of capital increased in the period since 1889 by about 28 million pounds.

Traffic and Receipts therefrom.

When we come to compare the receipts of the companies for 1893 with those for 1892 we at once find how seriously the returns have been affected by the great coal dispute. That a dispute of the magnitude of that referred to must have had injurious and far-reaching effects upon other industries is a fact that need scarcely be mentioned. It was generally recognised while it was in progress, and the figures we have here to refer to afford some indication of the extent to which the railway industry, for one, was affected by it. Until last year there had been no actual decrease in the gross receipts of the railway companies for seven years, and for the 40 years over which the records extend the figures show an almost uninterrupted increase. The reduction last year, although it does not actually stand alone, is yet without precedent in regard to its amount. It is most nearly approached by the great fall which occurred in 1879, but while in the case of that year it was the revenue derived from passenger traffic which declined most heavily it will be observed from the following table that the whole of last year's reduction was due to a falling off in the receipts from goods traffic, resulting, as we shall presently have occasion to notice, from an actual diminution of work done :—

Receipts from—	1893.	1892.	Increase.	
			Amount.	Per cent.
	Million £	Million £	Million £	
Passenger traffic - -	35·8	35·7	0·1	0·5
Goods traffic - - -	41·0	42·9	†1·9	†4·4
Miscellaneous* - -	3·8	3·5	0·3	6·3
Total - -	80·6	82·1	†1·5	†1·8

* The Miscellaneous receipts include rents, tolls, revenue from steam-boats, and other items. † Decrease.

There was thus a total decrease of revenue to the amount of 1,500,000*l.*, and we have to go back to the depression of 1884–5, and combine the injurious effects upon railway earnings of the bad trade of both years to find anything approaching a corresponding position of affairs. In 1884 there was a decrease in gross revenue of about 540,000*l.*, followed by a further decrease of 970,000*l.* in 1885. It is true that these reductions were upon considerably smaller sums than the total for 1892, the gross receipts of 1883 having been about 71 millions only, while those for 1892 were over 82 millions; but the decline shown by the figures for last year was nearly equal in amount to that which occurred in 1884 and 1885 put together. It may be pointed out, too, that last year's decrease of total revenue would, indeed, have been larger than was actually the case but for a rather unusual addition to the receipts from miscellaneous sources, those from passenger traffic having remained practically stationary as compared with 1892. Taking purely traffic receipts alone the decline in 1893 was from about 78½ millions to 76⅘ millions, a fall of nearly 2¼ per cent., so that notwithstanding the increase of capital and of mileage in the period, the traffic receipts fell back last year to about the level of those for 1890.

Passenger Traffic.

If we analyse the traffic receipts further we get the following comparison with regard to passenger traffic in 1892 and 1893 :—

Receipts from—	1893.	1892.	Increase.	
			Amount.	Per cent.
Ordinary passengers :—	£	£	£	
First class	3,036,000	3,122,000	*86,000**	*2·7**
Second class	2,075,000	2,376,000	*301,000**	*12·7**
Third class	22,623,000	22,217,000	406,000	1·8
Season-ticket holders	2,583,000	2,538,000	45,000	1·8
Excess luggage, mails, &c.	5,532,000	5,410,000	122,000	2·3
Total	35,849,000	35,663,000	186,000	0·5

* Decrease.

From these figures it appears that the decrease which has been observable in the returns for the last few years with regard to receipts from first and second class passengers was continued during 1893, and that both in actual amount and proportionate rate the decrease in both classes was heavier than it has recently been. This is especially the case with regard to the second-class passenger receipts, which have been reduced, compared with 1892, by over 300,000*l.*, or about 12¾ per cent. This heavy decrease seems altogether exceptional, and upon examination of the returns it is found to be caused mainly by a very general diminution in the second-class traffic rather than by the absolute cessation of that traffic on a few important systems, although this latter has also been a contributing cause to a considerable extent. Moreover, it cannot be said on this occasion, as has been the case in the last two years, that the decrease in the first and second class receipts is counterbalanced to any appreciable extent by increase in the receipts from season-ticket holders. There was an increase in revenue under this last-named head it is true, but it was much smaller than has been the case in recent years. The miscellaneous items (excess luggage, mails, &c.) show a fair average amount of increase, thus continuing a movement which has been going on uninterruptedly for many years, though even here there was some slackening of the rate of progress last year. The only item in the statement which continues to show elasticity is again the third-class passenger receipts, but even in this case the increase which occurred in 1893 can scarcely be considered altogether satisfactory, for although it more than outweighs the reductions in the first and second class receipts, yet if the receipts from ordinary passengers, *i.e.*, exclusive of season-ticket holders, are taken by themselves it will be observed that there is a balance to the good of about 19,000*l.* only on a total approaching 28 millions. Further, the increase in the third-class receipts, although the heaviest in the account, is, at most, about identical in amount with that of 1892 over 1891—there was no exceptional expansion last year. Yet coupled with

all this, it has to be mentioned that there were 321 more miles of line open for traffic at the end of 1893 than at the end of 1892, and, as we shall have to notice later, $8\frac{3}{4}$ million more passengers were carried and $1\frac{1}{2}$ million more miles were travelled by passenger trains than in the previous year.

We are again enabled by the courtesy of the railway companies to apportion the receipts from season ticket holders among the various classes to which they belong, and it may be of interest to do this as in previous years, although, as will have been gathered from what has been said above, no large difference will be made as regards the comparison with 1892, whether the season ticket receipts are included or not. The following table gives the particulars :—

RECEIPTS from FIRST, SECOND, and THIRD CLASS ORDINARY PASSENGERS and SEASON-TICKET HOLDERS.

Receipts from	1893.	1892.	Increase.	
			Amount.	Per cent.
Ordinary and season ticket passengers :—	£	£	£	
First class	4,063,000	4,149,000	†86,000	†2·1
Second class	2,884,000	3,213,000	†329,000	†10·2
Third class	23,328,000	22,888,000	440,000	1·9
*Total	30,317,000	30,253,000	64,000	0·2

* Including small amounts on account of season-ticket passengers, unclassed, viz., 42,290*l.* in 1893 and 2,877*l.* in 1892 † Decrease.

Thus, as regards first-class passengers, the result is the same, whether season-ticket receipts be included or excluded ; there was a decrease of 86,000*l.* in each case, from which it is evident that the season-ticket receipts of this class were virtually at a standstill last year. In the second-class receipts the decrease, which was 301,000*l.* taking ordinary passengers by themselves, becomes 329,000*l.* if we include the receipts from season-ticket holders, and from the fact that the proportionate decline, which was 12·7 per cent. excluding season-ticket receipts, is reduced to 10·2 per cent. including those receipts, while the actual amount of the decrease is larger, it will be gathered that the second-class season-ticket revenue bears a somewhat larger proportion to the ordinary receipts of that class than is the case with the first-class receipts. For the third class, the inclusion of the season-ticket receipts (which here include workmen's weekly tickets) slightly raises both the amount and proportionate rate of the increase over 1892 shown for ordinary passengers alone, and the final result of the inclusion of the season-ticket receipts is to increase the balance to the good from 19,000*l.* to 64,000*l.*, which is still a very small increase.

The following table gives the number of ordinary passengers of each class conveyed by railway during 1893 and 1892, excluding the journeys of season and periodical ticket holders :

—	1893.	1892.	Increase.	
			Number.	Per cent.
	No.	No.		
First class	30,049,000	30,602,000	553,000*	1·8*
Second class	59,990,000	61,848,000	1,858,000*	3·0*
Third class	783,138,000	771,985,000	11,153,000	1·4
Total	873,177,000	864,435,000	8,742,000	1·0

* Decrease.

The above figures as to first and second class passengers in 1893, however, must be taken with some qualification when used in comparison with the receipts from such passengers or with the numbers returned for 1892. It will be seen from the table that in both classes there was a considerable decrease last year, but this decrease would have been much greater had it not been for the opening during the year of the Liverpool Overhead Railway, a short line of five miles in length. The traffic over this railway, which carries first and second class passengers only, is of a nature which may be described as omnibus traffic, as will be understood from the fact that in the nine months of the year during which it was open it carried 495,708 first-class passengers for 6,233*l.*, and 3,350,673 second-class passengers for 23,852*l.* If allowance be made for the effect of this Company's returns upon the figures the decrease in the number of first-class passengers would be 1,049,000 instead of 553,000, and the percentage fall would have been 3·4 instead of 1·8; while in the case of the second class the decrease in numbers would have been 5,209,000 instead of 1,858,000, and in percentage 8·4 instead of 3·0. The variation made in the receipts, however, would be trivial in comparison with that in the numbers. The percentage decline in the first-class receipts would in fact only be raised from 2·7 to 3·0, and that in the second class from 12·7 to 13·7. Looking at these amended calculations we observe that for first-class passengers a decrease of 3·4 per cent. in the numbers occurs in conjunction with a decrease of 3·0 per cent. in the receipts; that for the second class the fall in numbers is 8·4 per cent., while for receipts it is 13·7 per cent.; and that for the third class an increase of 1·4 per cent. in numbers has to be compared with an increase of 1·8 per cent. in receipts, this of course being stated exclusive of any allowance for the journeys of season-ticket holders or for receipts on account of season and periodical tickets. From all this, when considered in connection with the fact that the passenger-train mileage last year did not show any considerable departure from the level reached in 1892, it would seem that as regards the comparison of receipts with work done the companies were in almost the same position as in 1892, the same amount of work being done in the conveyance of passengers for virtually the same money. In the absence of returns as to the actual passenger mileage, however, the figures are not quite conclusive on this point.

Of course the 873 millions of passengers conveyed during 1893 would be considerably increased if it were possible to form a trustworthy estimate of the journeys of season-ticket holders, but it may perhaps be assumed from the smallness of the increase in the receipts under this head that the general character of the statement would not be materially affected by so doing; the proportion of increase or decrease would probably still be much the same. Still the table does not, to the extent of the exclusion of these journeys of season-ticket holders, give a complete account of the work done by the companies in the carriage of passengers. It may be remarked, too, before leaving this subject of passengers conveyed, that while the average increase in the number of third-class passengers between 1888 and 1892 was over 30 millions per annum, the increase of 1892 over 1891 having been over 20 millions, the above table shows a slackening of the rate of progress, the addition to the numbers in 1893 being, in fact, just over 11 millions only.

Goods Traffic.

Turning to the receipts from goods traffic we have to submit the following table, which fully confirms the opinion already expressed as to the injurious effect of the great coal trade dispute upon the trade of the country generally:—

Receipts from	1893.	1892.	Decrease.	
			Amount.	Per Cent.
	£	£	£	
Mineral traffic - - -	16,421,000	17,845,000	*1,424,000*	*8·0*
General merchandise traffic -	23,209,000	23,680,000	*471,000*	*2·0*
Live stock - - - -	1,365,000	1,341,000	24,000*	1·7*
Total - - -	40,995,000	42,866,000	*1,871,000*	*4·4*

* Increase.

A falling off of nearly 1,900,000*l.* in the receipts from goods traffic is a new feature in the annual railway returns. No such falling off has previously occurred in the history of the British railways, and we have to go back to the depression of 1884 and 1885, and take the combined effect of the bad trade of both years, to find anything equal to it. The principal decrease is, of course, in the "mineral" traffic receipts, in which the reduction is about equal to the whole decrease in the total receipts of the companies from all sources during the year, thus leaving the increases and decreases in the other items pretty evenly balancing one another. That by far the larger part of this reduction was due to the protracted dispute in the coal trade is certain, and that the almost absolute cessation of coal traffic during many weeks over the systems of some of the most important lines indirectly influenced "general merchandise" traffic in an adverse direction is also more than probable. This is not the place for observations respecting the danger to trade and material loss to employers and employed caused by strikes and lock-outs as a means of settling labour disputes, but it is clear from these figures as affecting railways that something more is indicated than mere reduction of railway traffic and decrease in railway shareholders' dividends.

The following table compares the tonnage of goods conveyed in 1892 and 1893, and it is perhaps more instructive than the figures as to receipts referred to above as bearing directly on the diminution of work done last year. The ton-mileage, if available, would of course have afforded more solid ground for the comparison, and have brought out the facts as to diminution of work more clearly, but in the absence of that information we can only state the tonnage actually carried and the number of miles travelled by trains.

COMPARISON of the TONNAGE of "MINERALS" and "GENERAL MERCHANDISE" conveye in 1892 and 1893.

	1893.	1892.	Decrease.	
			Amount.	Per Cent.
	Million Tons.	Million Tons.	Million Tons.	
Minerals conveyed - - -	207·8	221·1	13·3	6·0
General merchandise conveyed - -	85·5	88·5	3·0	3·4
Total - - -	293·3	309·6	16·3	5·3

There was thus a decrease of 6 per cent. in the tonnage of "minerals" conveyed, coupled with a decrease of 8 per cent. in the receipts, which looks either as though the companies were last year doing the same amount of work for less money than formerly or that the portion of the actual traffic which fell off had heretofore been carried more than average distances. In the "general merchandise" traffic the falling off in tonnage which was 3·4 per cent., compares with a reduction of 2 per cent. in the receipts, the indications in this case thus being exactly the reverse of those afforded by the figures relating to "mineral" traffic. It is possible of course that these figures as to general merchandise may have some relation to the vexed question of railway rates and charges. But, as in the case of the receipts, it has to be said that last year's reduction of gross tonnage was to such a serious extent as to be altogether unprecedented. All the ground gained by the expansion of traffic during the last few years was swept away in 1893, and the total tonnage carried in the year fell back to somewhat below the level reached in 1889. Sixteen million tons and more, which was the amount of the reduction last year compared with 1892, represents no inconsiderable amount of traffic, and when it is remembered that over thirteen million tons of this reduction occurred in the "mineral" class, and was consequently mainly a decrease in the carriage of coal, a prime necessity of so many industries, the figures assume an increased importance. It may be of interest to quote the figures on this point as affecting the principal railway systems upon which

decrease of "mineral" traffic occurred and to show the amount of the decrease in each case. The following statement gives these particulars :—

Name of Company.	Tonnage of Minerals conveyed.			Receipts from Mineral Traffic.		
	1893.	1892.	Decrease in 1893.	1893.	1892.	Decrease in 1893.
	Thousand Tons.	Thousand Tons.	Thousand Tons.	Thousand £	Thousand £	Thousand £
Great Eastern	2,869	3,800	*931*	386	532	*146*
Great Northern	5,289	6,383	*1,094*	698	882	*184*
Great Western	19,883	20,773	*890*	2,096	2,204	*108*
Hull, Barnsley, and West Riding Junction	516	800	*284*	53	83	*30*
Lancashire and Yorkshire	11,018	12,640	*1,622*	829	892	*63*
London and North-Western	25,408	29,035	*3,627*	2,195	2,463	*268*
London and South-Western	2,255	2,737	*482*	246	284	*38*
London, Brighton, and South Coast	1,835	2,047	*212*	211	241	*30*
London, Chatham, and Dover	1,554	2,201	*647*	92	121	*29*
Manchester, Sheffield, and Lincolnshire	6,572	8,197	*1,625*	468	628	*160*
Midland	15,193	19,227	*4,034*	2,109	2,876	*767*
Taff Vale	11,643	12,298	*655*	426	448	*22*
Wrexham, Mold, and Connah's Quay	776	976	*200*	26	33	*7*

Exceptionally, it may be noticed, the traffic and receipts on account of "minerals" of the North-Eastern company, whose system serves a district in which the miners continued at work during the coal dispute, shows an increase as compared with 1892, to the extent of 4,242,000 in tonnage and 394,000*l.* in receipts, but it should be added that this increase is to be ascribed simply to the making good of the ground lost through the strike of the Durham coal miners in 1892.

It is also interesting in connection with the decreased traffic shown by the railway returns to refer to the particulars which we give below respecting the production of coal and iron and the quantities of coal exported to places abroad and shipped coastwise during 1893 and 1892. These figures have not only a bearing upon the point of a diminution of the trade and industry of the country last year, but also have some relation to the remarks above made respecting the detrimental effect of the great coal dispute upon the traffic returns of the railway companies.

Quantity of	1893.	1892.	Increase (+) or Decrease (−).	
			Amount.	Per cent.
	Tons.	Tons.	Tons.	
Coal raised	164,326,000	181,787,000	(−)17,461,000	(−) 9·6
Iron ore raised	11,203,000	11,313,000	(−) 110,000	(−) 1·0
Pig iron produced	*6,977,000	*6,709,000	(+) 268,000	(+) 4·0
Coal shipped coastwise	16,229,000	14,989,000	(+) 1,240,000	(+) 8·3
Coal exported abroad	†27,708,000	†29,048,000	(−) 1,340,000	(−) 4·6

* Including the quantity produced from foreign ores.
† Excluding coal shipped for the use of steamers engaged in the foreign trade.

These figures require little comment. The total quantity of coal shipped was about the same in both years, viz., 44 million tons, the increase in the quantity shipped coastwise being pretty evenly balanced by the decrease in the quantity exported to places abroad. The main fact, of course, is the reduction of nearly 10 per cent. in the quantity raised, and it will be noticed, as a coincidence, that there is something approaching a correspondence between the decrease in the actual quantity and the falling off shown by the figures relating to the goods traffic of the railway companies. There was a decrease of 17½ million tons in the quantity of coal raised last year, and there was a decrease of nearly 16½ million tons in the total quantity of goods carried over the railways.

Train Mileage.

It only remains to refer to the figures showing the mileage travelled by trains to complete the statement of work done by the companies during the year, so far as the

statistics available throw light upon the subject. The passenger-mileage and the ton-mileage would, of course, have given more complete information, but as yet the companies have not been required to furnish these details. The following gives the particulars as to mileage travelled by trains in 1893 and 1892 :—

——	Passenger Trains.	Goods Trains.	Total, including Mixed Trains.
	Million Miles.	Million Miles.	Million Miles.
1893 -	177·4	141·8	322·8
1892 -	175·9	148·5	327·8
Decrease -	1·5* or 0·8 per cent.	*6·7 or 4·5 per cent.*	*5·0 or 1·5 per cent.*

* Increase.

Summarising the whole of the figures as to traffic, we find that passengers increased in numbers by 1·0 per cent., or somewhat less if allowance be made for the numbers carried by the Liverpool Overhead line; that passenger train-mileage increased by 0·8 per cent.; and that passenger receipts increased by 0·5 per cent. On the other hand, goods traffic shows a decrease under each head—viz., of 5·3 per cent. in tonnage, of 4·4 per cent. in receipts, and of 4·5 per cent. in train-mileage, there being a close correspondence between the percentage falling off in the train-mileage and in the receipts in this latter case.

It will be seen from a reference to Table No. 13, in the Appendix, that there was a decrease in the train-mileage receipts last year to the extent of 0·36 of a penny, the receipts per train-mile having been 57·49*d.* in 1892 and 57·13*d.* in 1893. This decrease is in continuation of somewhat larger ones in 1892 and 1891, the whole decrease since 1890 being nearly 1½*d.* per train mile, while in the 10 years covered by the Table the decrease amounts to over 2¼*d.* per train mile. It may be added that not only was the average train-mileage receipt lower last year than in any of the previous 10 years, but it was also lower than it has been in any year since these annual reports commenced to be issued 20 years ago.

Working Expenditure.

It would only be reasonable to expect from the figures already adverted to, that coupled with the diminution of revenue owing to a diminution of work, there should have been some slackening in the rate of increase observable of late years in the gross amount of the expenses of working. As a fact there has been a decrease in the amount of these expenses, though that decrease is so trivial as to permit of the statement that the expenditure of 1893 was virtually of identical amount with that of 1892, when so much more work was done. This of course is tantamount to saying that *relatively* the expenditure of 1893 was considerably increased as compared with the previous year. Since 1889 the working expenditure has year by year been increasing out of proportion to the increase in receipts. For many years before 1890 the relative proportion of expenses to receipts had remained comparatively stationary, varying from about 52 to about 53 per cent., but in 1890 there was a rise from 52 to 54 per cent., and since then the proportion of expenses has shown a continuous increase of 1 per cent. each year, until, in 1893, for every 100*l.* of gross revenue earned 57*l.* were expended. The following shows the variations in the total expenses of the railway companies since 1889 :—

Year.	Total Working Expenses.	Increase.	
		Amount.	Per Cent.
	Million £	Million £	
1889 - - -	40·09	—	—
1890 - - -	43·19	3·10	7·7
1891 - - -	45·15	1·96	4·5
1892 - - - -	45·72	0·57	1·3
1893 - - -	45·70	*0·02**	—

* Decrease.

During each of these years except 1893 the revenue earned had also been increasing, though at a less rapid rate than in the case of the expenses; but in 1893 while the expenses were to all intents and purposes at a standstill, the receipts, as we have seen, fell off by nearly 1½ millions, or by about 1·8 per cent. on the total reached in 1892. This, of course, is only another way of saying what has been stated above, viz., that relatively to work done, the expenses of 1893 really increased as compared with the year before, and that the tendency which the expenses have shown during the last few years to increase in greater proportion than the receipts was continued last year to an appreciable extent.

The following shows the outlay of the companies during the last two years under each of the four principal heads :—

—	1893.	1892.	Increase (+) or Decrease (−) in 1893.
	Million £	Million £	Million £
Maintenance of way, works, and stations - -	7·49	7·40	(+) 0·09
Locomotive power - - - -	12·30	12·57	(−) 0·27
Repairing and renewing carriages and waggons -	3·90	4·04	(−) 0·14
Traffic expenses - - - -	14·24	14·15	(+) 0·09

These are the principal items of expense connected with absolute working, and they are also the main items affected by the question of the cost of materials and the extent of the wages bill. As will be seen, therefore, we have here actual increases under two heads, while, taking all four together, the reduction amounts to ⅗ths per cent. only, while the reduction of work, as measured by train-mileage, was to the extent of 1½ per cent.

Looking at the complete statement of expenses given in the Appendix (Table No. 11 — which deals with expenses on account of railway working only, and therefore excludes expenditure on account of steamboats, harbours, and canals) attention will again be very naturally attracted to the figures relating to "rates and taxes." Last year we had to report that in 1892 this item showed an altogether exceptional increase of about 122,000*l.*, or 5 per cent., on the corresponding amount for 1891. The amount for 1893 shows a still further increase of 219,000*l.*, or more than 9 per cent. over the amount for 1892, and this at a time of falling revenue. The whole increase in "rates and taxes" since 1891 amounts to 341,000*l.*, equal to about 15 per cent. on the 1891 total. To some extent, of course, this is due to the additional amount of property acquired by the railway companies, but there can be no doubt that the bulk of it is occasioned by increased payments to local authorities in respect of the same property. Then again, as was the case in 1892, the decreased revenue derived from first and second class passenger traffic is seen to be accompanied by a decline in the amount of "Government duty" paid, while the amount of compensations for personal injury shows a heavy fall from 199,000*l.* in 1892 to 127,000*l.* in 1893, or about 36 per cent.

It has been our practice in preparing our reports for the last few years to make an examination of the printed half-yearly accounts of the principal railway companies, with a view to extracting from them the particulars which they give respecting payments for wages and materials, and we have continued the examination on this occasion. Table No. 18 in the Appendix contains the particulars, and enables a comparison to be made between the figures for 1893 and those for the four previous years. The companies for which details are given are accountable between them for an expenditure of 38,586,000*l.* out of the 45,695,000*l.* which was the gross expenditure of all the companies for last year, and the table may therefore be looked upon as representative of about 85 per cent. of the whole cost of labour and materials incurred in railway working. Taking first the cost of coal and materials used in the working and repair of engines we get the following figures for the 15 leading lines :—

	Expenditure on Coal and Coke.	Expenditure on Materials in Repairing Department.
	£	£
In 1889	2,317,000	1,283,000
„ 1890	3,149,000	1,315,000
„ 1891	3,491,000	1,347,000
„ 1892	3,290,000	1,338,000
„ 1893	3,199,000	1,260,000

The figures as to the cost of materials used in the maintenance and renewal of permanent way and of carriages and waggons will be found in the Appendix. They are not quoted here, as there is naturally considerable variation among the different companies with regard to the expenditure which they think it necessary to incur at particular periods, and to use the figures as to these departments for the purpose of illustrating changes in cost of materials would seem to require either that all the different lines or systems should have been kept at the same standard of efficiency for the whole period covered by the table, or that each line required and received the same relative amount of attention in the way of renewal and repair. Referring to the above figures as to the locomotive department, however, to which the foregoing remarks do not apply—at least with anything like equal force—we see that after considerable increases in 1890 and 1891, especially with regard to fuel, there was a reduction in 1892, and that a still further reduction occurred last year. But in 1892 the decreased cost of fuel was coincident with an increase in the train-mileage run; whereas in 1893 it was accompanied by a decrease in the train-mileage: and if we assume that the expenses of the smaller lines varied in the same way as those of the larger, we find that with a train-mileage increase of 1·3 per cent. in 1892 the cost of fuel decreased by 5·7 per cent. On the other hand, in 1893, train-mileage decreased 1·5 per cent., and cost of fuel by 2·8 per cent. It would seem, therefore, that in spite of the enhanced price of coal ruling over a large portion of the latter half of the year, the railway companies were enabled to effect some slight reduction in their coal bill. This they were probably able to do by falling back on stocks in hand, by economies in working, and other arrangements, besides which it should be remembered that they had the advantage during 1892 and the first half of last year of a lower range of prices than that ruling in 1890 and 1891.

As bearing on this question of price, the following table, which we continue from former reports, may be interesting. It gives the approximate price of coal at the mines and the average prices at which coal and rails were exported, for each of the years from 1889 to 1893 inclusive, and enables a rough kind of comparison to be made between the fluctuations in prices and the actual outlay of the companies:—

Years.	Approximate Price of Coal at the Mines, according to the "Mineral Statistics."	Average Export Prices, computed from the Quantities and Declared Values of the Exports.	
		Of Coal.	Of Iron and Steel Rails.
	Per Ton.	Per Ton.	Per Ton.
1889	6*s.* 4¼*d.*	10·06*s.*	*4·61*l.*
1890	8*s.* 3*d.*	12·39*s.*	5·47*l.*
1891	8*s.* 0*d.*	11·96*s.*	5·03*l.*
1892	7*s.* 3*d.*	10·89*s.*	4·40*l.*
1893	6*s.* 9½*d.*	9·77*s.*	4·16*l.*

* Rails and tie rods.

One thing would seem to be evident from this table and the previous one, and that is that for a year or two at least no great reduction in the cost of fuel to the railway companies is to be looked for; and as the same thing may be said with regard to the cost of labour, as we shall presently see, and as "rates and taxes" and "general charges" (including office salaries, &c.) show no sign of diminution but rather the reverse, the inference to be drawn from last year's returns of expenditure is that the cost of

working is more likely to be maintained than to fall off in the immediate future. Consequently, if railway shareholders' dividends are to be increased in the next year or two it can only result from an increase of business.

On the point of wages we obtain the following figures from the table in the Appendix to which reference is made above :—

	In Locomotive Department.		In Traffic Department.
	Working of Engines.	Repairing and Renewing Engines.	
	£	£	£
In 1889	3,160,000	1,508,000	8,167,000
„ 1890	3,436,000	1,553,000	8,663,000
„ 1891	3,660,000	1,611,000	9,146,000
„ 1892	3,744,000	1,622,000	9,405,000
„ 1893	3,707,000	1,594,000	9,481,000

Thus, although measured by train-mileage, there was a decrease of work done last year the expenditure of these 15 leading companies on wages in the three departments referred to in the table, when taken together, actually shows an increase, though of trivial amount. The whole of this increase occurs in the traffic department and is in all probability due to an increased staff, rendered necessary, not by the exigencies of increased traffic, but partly by additional mileage open, and partly by reduced hours of labour. As regards working of engines, the decrease which occurred is fairly proportionate to the reduction in mileage run, the fall in the former being about 1 per cent., and in the latter 1½ per cent., while the wages in the engine-repairing department decreased 1·7 per cent. This latter item, however, can hardly be looked upon as being dependent on the work done by the engines to the same extent as the former. Wear and tear would of course occur, but it would not necessarily follow that it should be made good concurrently with the work done. Here again then the inference to be drawn from the figures seems to be that reduction is scarcely to be expected. In reality the tendency with regard to the cost of labour to the companies must necessarily be the other way, having regard to the requirements of traffic, the additional facilities constantly being afforded to the public, and the proceedings under the Act recently passed to deal with the hours of labour of railway servants.

The usual calculations have been made respecting the expenditure per train-mile incurred by some of the principal companies and by all the companies combined. The former particulars (*see* Appendix, Table No. 16) appear well worth the consideration of those interested in the particular undertakings. In proceeding to refer to the latter, we have first to quote the following summary showing for each of the different heads of expense the amount spent per train-mile in each of the last two years with the increase or decrease in each case :—

Expenditure on account of	Cost per Train-mile.		Increase or Decrease in 1893.	
	1893.	1892.	Increase.	Decrease.
	d.	*d.*	*d.*	*d.*
Maintenance of way	5·56	5·42	0·14	—
Locomotive power	9·16	9·22	—	0·06
Rolling stock	2·90	2·96	—	0·06
Traffic expenses	10·57	10·35	0·22	—
General charges	1·47	1·42	0·05	—
Rates and taxes	1·92	1·73	0·19	—
Government duty*	0·22	0·24	—	0·02
Compensations :				
Personal injuries	0·09	0·15	—	0·06
Damage to goods	0·18	0·21	—	0·03
Legal and Parliamentary expenses	0·18	0·20	—	0·02
Miscellaneous	0·34	0·36	—	0·02
Total	32·60	32·24	0·36	—

* For Great Britain only. The railway passenger duty is not charged in Ireland.

We had occasion to remark, in our report last year, that it was not probable that any reduction in the total outlay per train-mile would be shown when the calculations for 1893 came to be worked out, and the foregoing table proves the correctness of this forecast. There has in fact been an increase, and, we may add, that when expense is compared with the best unit of work available, *i.e.*, the train-mile, increase has been the rule for the last five years in succession. Such as it is, however, the increase of 1893 is not large relatively to that which occurred in the period from 1889 to 1891, but it is sufficient, together with a reduction of almost equal amount in the train-mileage receipts, to bring about a further and appreciable fall in the net earnings per train-mile. It has been previously intimated that no reduction in the principal items of expense can be expected for the next year or two at least, and seeing that the minor charges were last year at a comparatively low level, it would appear that the limit of economical working under existing conditions has been more or less permanently raised by the changes of the last few years from about 2*s.* 6*d.* to about 2*s.* 8½*d.* per train-mile run. The difference, 2½*d.*, upon a total train mileage of about 323 millions, the reduced figure for last year, represents, of course, a respectable sum.

The following table shows, for each of the last ten years, the variations which have taken place in the receipts, expenses, and net earnings per train-mile run :—

Years.	Traffic Receipts.		Working Expenditure.		Net Earnings.	
	Amount per Train-Mile.	Increase (+) or Decrease (−).	Amount per Train-Mile.	Increase (+) or Decrease (−).	Amount per Train-Mile.	Increase (+) or Decrease (−).
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1884	59·56	(−) 1·32	31·59	(−) 0·58	27·97	(−) 0·74
1885	58·19	(−) 1·37	30·93	(−) 0·66	27·26	(−) 0·71
1886	57·69	(−) 0·50	30·41	(−) 0·52	27·28	(+) 0·02
1887	57·63	(−) 0·06	30·26	(−) 0·15	27·37	(+) 0·09
1888	57·48	(−) 0·15	29·97	(−) 0·29	27·51	(+) 0·14
1889	58·37	(+) 0·89	30·54	(+) 0·57	27·83	(+) 0·32
1890	58·61	(+) 0·24	31·82	(+) 1·28	26·79	(−) 1·04
1891	58·12	(−) 0·49	32·22	(+) 0·40	25·90	(−) 0·89
1892	57·49	(−) 0·63	32·24	(+) 0·02	25·25	(−) 0·65
1893	57·13	(−) 0·36	32·60	(+) 0·36	24·53	(−) 0·72

There was thus a continuous decrease in both receipts and expenses per train-mile from 1884 to 1888 inclusive, the fall in the receipts, 3·40*d.*, being heavier than that in the expenses, which was 2·20*d.* only. This left the net earnings per train-mile of 1888 1·20*d.* below those of 1883. In the years 1889 and 1890 there was an increase in both the receipts and expenses per train-mile, but as the increase was greater in the expenses than in the receipts there was, taking the two years together, a further decrease of 0·72*d.* per train-mile in the net earnings. Since 1890 the position, so far as the companies are concerned, has been aggravated by a continuous decline in the receipts coupled with a continuous increase in expenses, the receipts having fallen by 1·48*d.* per train-mile and the expenses increased by ·78*d.* per train-mile, which means that the net earnings of 1893 show a further decline of 2·26*d.* per train-mile when compared with those of 1890. The whole fall in the net earnings, comparing 1893 with 1883, is therefore 4·18*d.* per train-mile run. From 1886 to 1889 inclusive the net earnings had been slowly but steadily increasing, the rise in the period having been a little over one halfpenny per train-mile. But this was all swept away by a decrease of almost double the amount in 1890, and since then there has been a further decline of about 2¼*d.* in the net earnings per train-mile.

Net Earnings and Dividends.

Coming to the consideration of the actual amount of the net earnings and the effect of the diminution in these upon the average rates of interest or dividend we have to observe, in the first place, that there has now been a decrease in the net amount earned and available for distribution among shareholders, in each of the last four years in succession. The decrease last year, however, far surpasses those of the three previous years, as it does also the decrease which occurred in any year since anything like accurate information has been obtainable. In point of fact, decrease in net earnings had only occurred previously to 1890 on three occasions, viz., in 1874,

and in 1884 and 1885, and if we take the amounts lost in 1884 and 1885 and add to them the losses of the three years, 1890, 1891, and 1892, we still find the total almost equalled by the decline of 1893 alone. The figures are :—

	£
Amount of decrease in 1884 - - -	388,000
,, ,, 1885 - - -	538,000
,, ,, 1890 - - -	171,000
,, ,, 1891 - - -	28,000
,, ,, 1892 - - -	357,000
Total - - - -	1,482,000
	£
Amount of decrease in 1893 - - -	1,437,000

In 1889, when the net earnings were the highest on record, the amount reached was 36,931,000*l.* : last year's amount was 34,937,000*l.*, a falling off of 1,994,000*l.*, or nearly 5½ per cent. At the same time it must be remembered that these diminished net earnings have had to be spread over a capital which has been considerably increased in amount, even excluding nominal additions on the conversion and consolidation of stocks. Compared with 1889, capital has increased from 877 millions to 971 millions, that is, by 94 millions, of which about 27 millions may be said to be non-existent and of a nominal character only. But even so, the real increase of capital has been at least 67 millions, or over 7½ per cent. on the 1889 total, and the consequence is that the percentage of net earnings to capital has declined, whether the paid-up capital as returned by the companies be taken, or allowance be made for merely nominal increase. On the former basis, the returns show a continuous decrease from the 4·21 per cent. of 1889 to the 3·60 per cent. of 1893, that is to say, a fall of something over three-fifths in the percentage rate, and of this fall last year's share alone accounts for almost one-half. It need scarcely be added that the low rate of 3·60 per cent. shown by last year's returns is absolutely the lowest on record. Of course the pressure of this decline has been felt most severely by the holders of the "ordinary" stocks. Other stocks have also lost ground, but to a much less degree. Turning once more to the table in the Appendix showing the computed amounts and average rates of dividend or interest paid on the different groups of capital, it will be seen that in average rate, the "guaranteed and preference" stocks have declined since 1889 from 4·12 per cent. to 3·98 per cent. and that the "loans and debenture stocks" have declined in the same time from 4·11 per cent. to 3·75 per cent. Meanwhile the "ordinary" shareholders' rate has gone back from the 4·66 per cent. of 1889 to 3·51 per cent., which is the rate calculated for last year ; so that the decline of 1·15 in the rate for the ordinary compares with reductions of 0·14 and 0·36 only in the rates for the "guaranteed and preference" and the "loans and debenture stocks" respectively. Comparing 1893 with 1892, "ordinary" shows a fall in its average rate of dividend from 3·98 per cent. to 3·51 per cent. ; "guaranteed and preference" from 4·04 per cent. to 3·98 per cent.; and "loans and debenture stocks" from 3·88 per cent. to 3·75 per cent. Since 1889, when, as above stated, the net earnings available for distribution were at their highest level, the actual amounts computed as paid on the descriptions of capital other than "ordinary" show almost continuous increases, the only exception being a very slight fall last year in the case of the guaranteed and preference capital. The average rates for these two groups of capital, however, are shown by the table in the Appendix to have declined in the period, but the decline is in both cases only apparent. This indeed must necessarily be the case from the character of the classes of capital mentioned ; so that the increase in the computed amounts of dividend or interest in these cases, is nothing more than rendered requisite by real increases in the amounts over which they fell to be distributed, while the reduction in average rates, being in the main due, especially in the case of the debenture stock, to merely nominal increases of capital on conversion and consolidation operations, is of course almost entirely of a nominal nature also. In the case of "ordinary," on the other hand, not only does the capital concerned show an increase quite proportionate to that in the other descriptions, but the calculated amounts of dividend distributed have largely decreased from the 15,210,000*l.* shown by the table for 1889. The whole amount of the decrease since 1889 is 2,789,000*l.*, or 18 per cent., but as the combined reductions of 1890, 1891, and 1892 amounted only to 1,368,000*l.*, over one-half of the whole fall occurred in 1893 alone. There is a close correspondence, too, between the reduction in the net earnings of 1893 compared with

1892, and that in the computed amount of dividend paid to ordinary shareholders as between the two years; in the former case the decline amounted to 1,437,000*l.*, and in the latter to 1,421,000*l.*

The following table, which is a summary of the Table No. 4 in the Appendix, shows in the usual form the amounts of each description of capital, classed according to the rates per cent. of dividend or interest paid last year:—

Rate of Interest or Dividend.	Ordinary.		Guaranteed.		Preferential.		Loans and Debenture Stock.	
	Amount of Capital.	Per cent. of Total.	Amount of Capital.	Per cent. of Total.	Amount of Capital.	Per cent. of Total.	Amount of Capital.	Per cent. of Total.
	£		£		£		£	
Nil - - - -	59,158,886	16·7	408,770	0·4	14,544,046	5·8	367,665	0·1
Not above 1 per cent. -	24,726,622	7·0	—	—	100,000	0·0	—	—
Above 1 & not over 2 per cent.	10,454,861	2·9	1,301,180	1·3	3,921,170	1·6	50,000	0·0
„ 2 „ 3 „ -	24,609,615	6·9	117,000	0·1	7,917,426	3·2	99,995,101	37·6
„ 3 „ 4 „ -	78,259,438	22·1	57,890,046	56·8	172,151,267	69·2	110,008,673	41·3
„ 4 „ 5 „ -	51,196,114	14·4	38,059,741	37·3	47,639,464	19·2	54,347,319	20·4
„ 5 „ 6 „ -	100,176,175	28·3	4,119,580	4·0	2,462,484	1·0	1,577,092	0·6
„ 6 „ 7 „ -	3,902,238	1·1	2,000	0·0	5,340	0·0	—	—
„ 7 „ 8 „ -	191,600	0·1	—	—	—	—	11,200	0·0
„ 8 „ 9 „ -	270,000	0·1	—	—	—	—	—	—
„ 9 „ 10 „ -	1,331,240	0·4	50,000	0·1	—	—	—	—
Total -	354,276,789	100·0	101,948,317	100·0	248,741,197	100·0	266,357,050	100·0

On comparing this table with the similar one for 1892 in our report published a year ago, it will be observed that both guaranteed and preference capital remained comparatively steady as regards grouping according to rates of dividend. Such alterations as really occurred were not sufficient to effect any striking differences in the amounts or percentages of the various groups. In the loans and debenture stocks, however, some alteration is to be noticed, the amount receiving between 3 and 4 per cent. having decreased by 24 millions, and the percentage for the group from 53·4 to 41·3, while the group lying between 2 and 3 per cent. has increased in amount by 38 millions and in percentage from 24·5 to 37·6. On reference to the returns this variation is found to be almost entirely due to the conversion operations of the London and North-Western Company previously adverted to, that Company having transformed its debenture stock, amounting to 27,800,000*l.* in 1892, from a 4 per cent. into a 3 per cent. stock, nominally increasing the amount to the extent of about 9¼ millions. But in the case of the ordinary capital the variations are seen to be very marked, and these variations, as will be easily understood from our previous observations, are all in the nature of retrogressions from the grouping established by the 1892 returns. In every group in fact, comparing 1892 and 1893, there has been a large reversion to the group next below. Thus, if we take as a starting point the group receiving between 6 and 7 per cent: we find that there has been a decline of no less than 41 millions out of the 45 millions which was the total of that group in 1892 to the class receiving between 5 and 6 per cent. This fact apparently involves the further one of a transfer of about 22 millions included in the 5 to 6 per cent. group in 1892 to the group receiving between 4 and 5 per cent. in 1893. Following this comes a decline of 33 millions from the 4 to 5 per cent. group to the group receiving between 3 and 4 per cent. Then we have a falling back of 8 millions from this last-named group to the group lying between 2 and 3 per cent.; another of 16 millions from the 2 to 3 per cent. group to the group next below, viz., that receiving between 1 and 2 per cent.; and then again a further decline of 15 millions from this 1 to 2 per cent. group to the group receiving a rate below 1 per cent. This must not be assumed to be an exact statement of the case, but it fairly represents what has actually occurred. The

following table, which continues one published in our last report, will enable the variations which have occurred in the grouping of the ordinary capital since 1889 to be easily followed :—

Rates of Dividend.	1889.		1890.		1891.		1892.		1893.	
	Amount.	Per cent. of Total.	Amount.	Per cent. of Total.	Amount.	Per cent. of Total.	Amount.	Per cent. of Total.	Amount.	Per cent. of Total.
	Million £		Million £		Million £		Million £		Million £	
Nil - - -	44·5	13·6	44·7	13·5	47·0	13·8	49·6	14·3	59·2	16·7
Not above 1 per cent. - -	2·6	0·8	10·8	3·2	13·6	4·0	11·8	3·4	24·7	7·0
Above 1 and not over 2 per cent.	2·9	0·9	3·3	1·0	9·6	2·8	9·3	2·7	10·4	2·9
„ 2 „ 3 „	37·4	11·4	35·7	10·8	38·5	11·3	32·5	9·3	24·6	6·9
„ 3 „ 4 „	25·0	7·7	30·1	9·1	44·3	13·0	52·8	15·2	78·3	22·1
„ 4 „ 5 „	55·6	17·0	58·7	17·7	31·1	9·1	61·7	17·7	51·2	14·4
„ 5 „ 6 „	66·1	20·3	24·3	7·3	29·3	8·6	80·7	23·2	100·2	28·3
„ 6 „ 7 „	20·7	6·3	54·9	16·5	122·8	36·1	45·1	13·0	3·9	1·1
„ 7 „ 8 „	67·4	20·7	67·5	20·3	2·7	0·8	2·1	0·6	0·2	0·1
„ 8 „ 9 „	3·5	1·1	1·0	0·3	0·2	0·1	0·6	0·2	0·3	0·1
Over 9 per cent. - -	0·5	0·2	1·1	0·3	1·2	0·4	1·5	0·4	1·3	0·4
Total - -	326·2	100·0	332·1	100·0	340·3	100·0	347·7	100·0	354·3	100·0

Summary.

We have now to summarise the principal particulars to which we have had occasion to refer in the foregoing pages. The following table, which is in the usual form, will, we think, be convenient for this purpose :—

SUMMARY of the MILEAGE, CAPITAL, TRAFFIC RECEIPTS, WORKING EXPENSES, and NET EARNINGS of the RAILWAYS of the UNITED KINGDOM in 1892 and 1893 compared.

	1893.	1892.	Increase in 1893.		Decrease in 1893.	
			Amount.	Per cent.	Amount.	Per cent.
	Miles.	Miles.	Miles.			
Mileage - - - -	20,646	20,325	321	1·6	—	—
Of which double or more - -	11,272	11,158	114	1·0	—	—
	£	£	£		£	
Capital - - - -	971,323,353	944,357,320	26,966,033	2·9	—	—
Capital per mile open - -	47,047	46,463	584	1·3	—	—
Ordinary capital - - -	354,276,789	347,700,876	6,575,913	1·9	—	—
Receipts :—	£	£	£		£	
Passenger - - -	35,849,449	35,662,816	186,633	0·5	—	—
Goods - - -	40,994,637	42,866,498	—	—	1,871,861	4·4
Miscellaneous - - -	3,787,806	3,562,726	225,080	6·3	—	—
Total - - -	80,631,892	82,092,040	—	—	1,460,148	1·8
Working expenditure - -	45,695,119	45,717,965	—	—	22,846	0·0
Net earnings - -	34,936,773	36,374,075	—	—	1,437,302	4·0
	d.	*d.*	*d.*		*d.*	
Receipts per train-mile from traffic -	57·13	57·49	—	—	0·36	0·6
Expenditure per train-mile, exclusive of harbour, &c. expenses -	32·60	32·24	0·36	1·1	—	—
Net earnings per train-mile -	24·53	25·25	—	—	0·72	2·9
Per-centage of net earnings on capital - - - -	3·60	3·85	—	—	0·25	6·5
Dividend paid on ordinary capital -	*3·51	*3·98	—	—	0·47	11·8

* These per-centages are calculated on amounts a little in excess of the true totals. *See* note to Table 3, Appendix.

From whatever point of view this table may be looked at, the general result is unsatisfactory, and further comment is unnecessary. The dislocation of trade and industry caused by the coal strike of last year will long be remembered by those interested in railway undertakings as materially helping to produce net results which

make 1893 the worst year on record so far as they are concerned. Had it not been for this dispute it would seem probable that the increase which occurred in the revenue from passenger traffic would have been somewhat larger than was actually the case, other things being equal; and as the reduction in goods traffic revenue is to be ascribed mainly to the disturbing cause referred to, it requires little consideration to appreciate how much more advantageous the results of the year's working would have been to the railway shareholder in its absence. It is to be hoped from all points of view that when the returns for 1894 come to be completed they will at least show a more satisfactory condition of affairs. A decline of revenue such as that exhibited by the returns for 1893, will, however, take a good deal of making up, and in addition there is the further fact that as yet expenditure shows no tendency towards diminution. Still, judging from appearances, it does seem likely that the ground lost in 1893 will prove to have been made good in 1894, and that, at any rate as regards the revenue side of the account, there may even be some improvement as compared with 1892. But the prospects of the current year are scarcely matters for comment in this report.

We have, &c.,

R. GIFFEN.
FRANCIS J. S. HOPWOOD.

20th August 1894.

APPENDIX.

NOTE.—The Receipts from Miscellaneous Sources, and the Expenditure for Steamboats, Canals, Harbours, and Docks, are not included in any of the following Tables.

No. 1.—LENGTH OF RAILWAYS open for Traffic on the 31st December in each of the Years from 1884 to 1893.

	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
	Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*
In England and Wales	13,340	13,612	13,678	13,825	13,982	14,034	14,119	14,156	14,242	14,440
„ Scotland	2,999	2,982	3,022	3,079	3,097	3,118	3,162	3,172	3,188	3,215
„ Ireland	2,525	2,575	2,632	2,674	2,733	2,791	2,792	2,863	2,895	2,991
„ United Kingdom	18,864	19,169	19,332	19,578	19,812	19,943	20,073	20,191	20,325	20,646

No. 2.—AMOUNT of ORDINARY, GUARANTEED and PREFERENTIAL, and LOAN CAPITAL, and PROPORTION PER CENT. of each to the TOTAL CAPITAL of RAILWAY COMPANIES in the UNITED KINGDOM on 31st December in each of the Years from 1884 to 1893.

Year.	Ordinary.		Guaranteed and Preferential.		Loans and Debenture Stock.		Total.	
	Amount.	Proportion to Total Capital.	Amount.	Proportion to Total Capital.	Amount.	Proportion to Total Capital.	Amount.	Proportion to Total Capital.
	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.
1884	298,983,446	37	301,412,847	38	201,068,074	25	801,464,367	100
1885	302,254,759	37	308,129,163	38	205,474,133	25	815,858,055	100
1886	305,202,082	37	314,451,644	38	208,690,528	25	828,344,254	100
1887	314,795,317	37	318,824,385	38	212,351,952	25	845,971,654	100
1888	322,338,446	37	323,504,819	38	218,852,698	25	864,695,963	100
1889	326,229,558	37	327,446,627	37	222,918,981	26	876,595,166	100
1890	332,070,153	37	332,889,003	37	232,512,870	26	897,472,026	100
1891	340,361,063	37	339,182,845	37	239,881,213	26	919,425,121	100
1892	347,700,876	37	345,519,156	36	251,137,288	27	944,357,320	100
1893	354,276,789	37	350,689,514	36	266,357,050	27	971,323,353	100

No. 3.—AMOUNT and AVERAGE RATE of DIVIDEND on each DESCRIPTION OF CAPITAL in each of the Years from 1884 to 1893.

Year.	Ordinary Capital.		Guaranteed and Preferential Capital.		Loans and Debenture Stock.		Total.	
	Amount.	Rate.	Amount.	Rate.	Amount.	Rate.	Amount.	Rate.
	£		£		£		£	
1884	12,982,094	4·34	12,785,282	4·24	8,473,692	4·21	34,241,068	4·27
1885	12,222,828	4·04	12,846,963	4·17	8,598,446	4·18	33,668,237	4·13
1886	12,039,316	3·94	13,025,944	4·14	8,727,906	4·18	33,793,166	4·08
1887	12,832,775	4·08	13,199,786	4·14	8,871,896	4·18	34,904,457	4·13
1888	13,615,997	4·22	13,320,992	4·12	9,091,770	4·15	36,028,759	4·17
1889	15,209,927	4·66	13,484,048	4·12	9,158,733	4·11	37,852,708	4·32
1890	14,988,864	4·51	13,734,266	4·13	9,287,705	3·99	38,010,835	4·24
1891	14,433,657	4·24	13,831,973	4·08	9,466,110	3·95	37,731,740	4·10
1892	13,842,281	3·98	13,964,330	4·04	9,754,567	3·88	37,561,178	3·98
1893	12,420,830	3·51	13,941,094	3·98	9,982,905	3·75	36,344,829	3·74

NOTE.—The amounts in the above table are slightly in excess of the true totals, as some companies have invested a small portion of their capital in the stocks and shares of other companies.

No. 4.—Statement showing the various Rates of Dividend or Interest Paid on Capital in 1893, and the Amounts on which each Rate was Paid.

Ordinary Capital.				Guaranteed Capital.		Preference Capital.		Loans.		Debenture Stock.	
Rate of Dividend.	Amount at each Rate.	Rate of Dividend.	Amount at each Rate.	Rate of Dividend.	Amount at each Rate.	Rate of Dividend.	Amount at each Rate.	Rate of Interest.	Amount at each Rate.	Rate of Interest.	Amount at each Rate.
Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£
*Nil.	5,593,968		(*continued.*)	*Nil.	340,210	*Nil.	4,316,079	Nil.	300	Nil.	367,365
*3	1,579,247	3¾	4,211,920	Nil.	68,560	Nil.	10,227,967	2½	745	1½	50,000
*3½	195,300	3⅞	33,765,432	1½	1,200,000	⅜	75,000	2¾	5,000	2¼	29,071
*5	465,272	4	15,692,044	2	101,180	½	25,000	3	521,156	2½	250,000
Nil.	53,564,918	4 1/20	1,014,000	2½	100,000	1 13/480	56,000	3¼	582,028	3	99,189,129
⅛	102,822	4¼	131,359	3	17,000	1½	5,170	3½	1,225,392	3¼	150,000
¼	100,000	4⅜	13,462,444	3½	775,980	1 7/10	75,000	3¾	15,183	3½	1,752,841
⅜	131,980	4 9/20	75,000	4	57,114,066	2	3,785,000	4	4,626,038	4	101,657,191
½	740,646	4½	5,653,865	4¼	1,807,428	2⅛	1,500,000	4¼	97,650	4¼	5,547,818
⅝	9,163,650	4¾	25,017,500	4½	4,034,375	2½	6,417,426	4½	4,811,071	4⅜	10,000
11/16	630,000	4⅞	2,095,383	4¾	40,000	3¼	415,198	5	1,699,228	4½	28,504,974
¾	700,150	5	3,281,291	5	32,177,938	3⅜	242,320	5½	9,000	5	13,676,578
⅞	243,975	5⅛	4,970,455	5⅛	800,000	3 9/20	6,686,184	6	82,080	6	1,486,012
1	12,913,399	5¼	863,000	5½	180,000	3½	5,509,037	8	5,800	8	5,400
1 3/480	15,000	5⅜	39,950,705	5⅝	40,000	4	159,298,528				
1⅛	111,650	5½	329,450	6	3,099,580	4¼	384,000	£	13,680,671	£	252,676,379
1¼	2,761,234	5¾	2,548,850	6⅛	2,000	4½	14,930,010				
1⅜	318,000	5⅝	189,950	10	50,000	5	32,325,454		Average rate of Interest on Loans, 4·20 per cent.		Average rate of Interest on Debenture Stock, 3·72 per cent.
1 7/16	58,430	5 13/15	266,675			5½	621,870				
1½	3,470,748	5⅞	29,151,873	£	101,948,317	6	1,840,614				
1⅝	352,250	6	21,905,217			6½	5,340				
1¾	360,380	6⅛	775,800		Average rate of Dividend on Guaranteed Capital, 4·35 per cent.	£	248,741,197				
2	3,007,169	6½	965,148				Average rate of Dividend on Preference Capital, 3·82 per cent.				
2¼	516,710	6¾	2,020,400								
2⅝	2,640,915	7	140,890								
2 1/16	422,443	7⅛	128,600								
2¾	929,336	7⅝	48,000								
2 13/16	120,000	8	15,000								
2⅞	10,833,309	8½	45,000								
3	7,567,655	9	225,000								
3⅛	17,661,127	9½	1,331,240								
3¼	171,875	£	354,276,789								
3 3/16	228,675										
3⅜	70,000										
3½	6,228,865										
3⅝	34,200										
	(*continued.*)										

Average rate of Dividend on Ordinary Capital, 3·51 per cent.

Average rate of Dividend on Guaranteed and Preference Capital, 3·98 per cent.

Average rate of Interest on Loans and Debenture Stock, 3·75 per cent.

The average rate of Dividend or Interest upon the whole, calculated upon the above amounts and at the above rates as given in the Annual Return, was 3·74 per cent.

* Capital of companies whose lines were in course of construction.

No. 5.—STATEMENT showing the AMOUNTS by which the CAPITALS of the RAILWAY COMPANIES had, at the 31st December 1893, been NOMINALLY INCREASED on the CONVERSION, CONSOLIDATION, and DIVISION of their STOCKS.

[In some cases the consolidation resulted in a nominal decrease, and the Amounts by which the Capitals were so decreased are printed in *italics*.]

Name of Company.	Ordinary.	Guaranteed and Preferential.	Debenture Stock.	Total.
ENGLAND AND WALES.	£	£	£	£
Alexandra (Newport and South Wales) Docks and Railway	—	192,205	—	192,205
Brecon and Merthyr Tydfil Junction	—	—	*46,118*	*46,118*
Burry Port and Gwendreath Valley	*121,860*	*16,740*	—	*138,600*
Cambrian	—	129,757	151,449	281,206
Cornwall Minerals	63,266	80,493	108,120	251,879
Devon and Somerset	—	—	511,896	511,896
East London	840,599	—	532,101	1,372,700
Furness	—	478,375	—	478,375
Great Eastern	—	1,667,758	886,582	2,554,340
Great Northern	3,246,124	1,803,832	3,044,115	8,094,071
Great Western	*442,735*	*299,357*	—	*742,092*
Isle of Wight	154,000	16,802	37,000	207,802
Kettering, Thrapstone, and Huntingdon	100,000	112,500	—	212,500
King's Lynn Docks and Railway	—	49,750	—	49,750
Lancashire and Yorkshire	—	2,100,588	—	2,100,588
London and North-Western	1,933,542	7,443,410	9,284,933	18,661,885
London and South-Western	1,241,440	1,096,574	348,336	2,686,350
London, Brighton, and South Coast	—	*201,825*	—	*201,825*
London, Tilbury, and Southend	—	450	15,000	15,450
Manchester, Sheffield, and Lincolnshire	—	478,285	—	478,285
Metropolitan (Surplus Lands Capital)	2,640,915	442,043	—	3,082,958
Midland	*170,207*	4,254,833	5,988,658	10,073,284
Neath and Brecon	—	*257,453*	*73,758*	*331,211*
North-Eastern	399,200	—	—	399,200
North Staffordshire	30,140	—	—	30,140
North Wales (narrow gauge)	—	—	4,600	4,600
Rhymney	10,398	249,080	—	259,478
Severn and Wye and Severn Bridge	*147,213*	137,456	17,072	7,315
Southport and Cheshire Lines Extension	15,000	—	—	15,000
Taff Vale	3,214,284	331,941	207,147	3,753,372
Wrexham, Mold, and Connah's Quay	18,749	—	*48,909*	*30,160*
Total England and Wales at 31st December 1893	13,025,642	20,290,757	20,968,224	54,284,623
Total England and Wales at 31st December 1892	12,505,199	20,290,757	11,679,348	44,475,304
SCOTLAND.				
Caledonian	2,784,693	3,657,902	—	6,442,595
Glasgow and South-Western	442,250	721,461	—	1,163,711
Great North of Scotland	500,218	485,388	50,301	1,035,907
North British	9,163,650	2,381,364	3,265,485	14,810,499
Total Scotland at 31st December 1893	12,890,811	7,246,115	3,315,786	23,452,712
Total Scotland at 31st December 1892	12,890,811	7,223,378	3,315,786	23,429,975
IRELAND.				
Belfast and Northern Counties	—	55,575	—	55,575
Great Northern of Ireland	—	148,164	120,300	268,464
Total Ireland at 31st December 1893	—	203,739	120,300	324,039
Total Ireland at 31st December 1892	—	203,739	—	203,739
Total United Kingdom at 31st December 1893	25,916,453	27,740,611	24,404,310	78,061,374
Total United Kingdom at 31st December 1892	25,396,010	27,717,874	14,995,134	68,109,018

No. 6. — Total Railway Receipts and Expenditure, and Net Receipts from Railway Working, and Per-centage Proportion of Expenses to Receipts, and of Net Receipts to Total Share and Loan Capital, in each of the Years from 1884 to 1893.

Year.	Total Traffic Receipts.	Total Railway Working Expenditure.		Net Receipts from Railway Working.	
		Amount.	Proportion per cent. to Total Traffic Receipts.	Amount.	Proportion per cent. to Total Share and Loan Capital.
ENGLAND AND WALES.					
	£	£		£	
1884	57,557,207	30,514,162	53·0	27,043,045	4·07
1885	56,700,406	30,198,294	53·3	26,502,112	3·91
1886	56,589,183	29,895,180	52·8	26,694,003	3·88
1887	57,769,493	30,444,931	52·7	27,324,562	3·89
1888	59,160,986	31,074,571	52·5	28,086,415	3·93
1889	62,691,817	32,972,045	52·6	29,719,772	4·11
1890	65,183,874	35,406,400	54·3	29,777,474	4·02
1891	66,671,503	37,147,706	55·7	29,523,797	3·89
1892	66,640,334	37,699,889	56·6	28,940,445	3·72
1893	64,845,955	37,481,811	57·8	27,364,144	3·42
SCOTLAND.					
1884	7,357,760	3,831,413	52·1	3,526,347	3·50
1885	7,185,784	3,688,247	51·3	3,497,537	3·39
1886	7,273,511	3,699,386	50·9	3,574,125	3·42
1887	7,358,764	3,705,314	50·4	3,653,450	3·42
1888	7,727,822	3,779,036	48·9	3,948,786	3·46
1889	8,032,640	3,962,516	49·3	4,070,124	3·51
1890	8,288,135	4,397,545	53·1	3,890,590	3·23
1891	8,530,923	4,562,967	53·5	3,967,956	3·24
1892	8,760,901	4,619 084	52·7	4,141,817	3·22
1893	8,802,005	4,607,727	52·3	4,194,278	3·18
IRELAND.					
1884	2,786,075	1,566,207	56·2	1,219,868	3·41
1885	2,758,777	1,540,992	55·9	1,217,785	3·42
1886	2,752,683	1,515,906	55·1	1,236,777	3·44
1887	2,786,329	1,515,426	54·4	1,270,903	3·49
1888	2,851,062	1,513,681	53·1	1,337,381	3·66
1889	2,992,600	1,640,795	54·8	1,351,805	3·65
1890	3,076,338	1,750,541	56·9	1,325,797	3·55
1891	3,159,207	1,732,827	54·9	1,426,380	3·78
1892	3,128,079	1,724,159	55·1	1,403,920	3·65
1893	3,196,126	1,758,329	55·0	1,437,797	3·71
UNITED KINGDOM.					
1884	67,701,042	35,911,782	53·0	31,789,260	3·97
1885	66,644,967	35,427,533	53·2	31,217,434	3·83
1886	66,615,377	35,110,472	52·7	31,504,905	3·80
1887	67,914,586	35,665,671	52·5	32,248,915	3·81
1888	69,739,870	36,367,288	52·1	33,372,582	3·86
1889	73,717,057	38,575,356	52·3	35,141,701	4·01
1890	76,548,347	41,554,486	54·3	34,993,861	3·90
1891	78,361,633	43,443,500	55·4	34,918,133	3·80
1892	78,529,314	44,043,132	56·1	34,486,182	3·65
1893	76,844,086	43,847,867	57·1	32,996,219	3·40

No. 7.—Amount of Receipts from Passenger and Goods Traffic, and the Gross Traffic Receipts of Railway Companies in the United Kingdom in each Year from 1858 to 1893; showing also the Amount of the Increase, and the Rate of Increase per cent., of each Year over the previous Year.

Year.	Passenger Traffic.			Goods Traffic.			Gross Receipts from Traffic.		
	Receipts.	Annual Increase.		Receipts.	Annual Increase.		Receipts.	Annual Increase.	
		Amount.	Per cent.		Amount.	Per cent.		Amount.	Per cent.
	£	£		£	£		£	£	
1858 -	11,697,906			12,258,845			23,956,751		
1859 -	12,537,493	839,587	7·18	13,206,009	947,164	7·73	25,743,502	1,786,751	7·46
1860 -	13,085,756	548,263	4·37	14,680,866	1,474,857	11·17	27,766,622	2,023,120	7·86
1861 -	13,326,475	240,719	1·84	15,238,880	558,014	3·80	28,565,355	798,733	2·88
1862 -	13,911,985	585,510	4·39	15,216,573	‡*22,307*	‡*0·15*	29,128,558	563,203	1·97
1863 -	14,521,528	609,543	4·38	16,634,869	1,418,296	9·32	31,156,397	2,027,839	6·96
1864 -	15,684,040	1,162,512	8·01	18,331,524	1,696,655	10·20	34,015,564	2,859,167	9·18
1865 -	16,572,051	888,011	5·66	19,318,062	986,538	5·38	35,890,113	1,874,549	5·51
1866 -	17,395,925	823,874	4·97	20,768,429	1,450,367	7·51	38,164,354	2,274,241	6·34
1867 -	17,935,634	539,709	3·10	21,544,365	775,936	3·74	39,479,999	1,315,645	3·45
*1868 -	—	—	—	—	—	—	—	—	—
1869 -	18,811,504	†875,870	†4·88	22,263,817	†719,452	†3·34	41,075,321	†1,595,322	†4·04
1870 -	19,301,911	490,407	2·61	24,115,159	1,851,342	8·32	43,417,070	2,341,749	5·70
1871 -	20,622,580	1,320,669	6·84	26,484,978	2,369,819	9·83	47,107,558	3,690,488	8·50
1872 -	22,287,555	1,664,975	8·07	29,016,559	2,531,581	9·56	51,304,114	4,196,556	8·91
1873 -	23,853,892	1,566,337	7·03	31,821,529	2,804,970	9·67	55,675,421	4,371,307	8·52
1874 -	24,893,615	1,039,723	4·36	32,005,883	184,354	0·58	56,899,498	1,224,077	2·20
1875 -	25,714,681	821,066	3·30	33,268,072	1,262,189	3·94	58,982,753	2,083,255	3·66
1876 -	26,163,551	448,870	1·75	33,754,317	486,245	1·46	59,917,868	935,115	1·59
1877 -	26,534,110	370,559	1·42	34,109,947	355,630	1·05	60,644,057	726,189	1·21
1878 -	26,889,614	355,504	1·34	33,564,761	‡*545,186*	‡*1·60*	60,454,375	‡*189,682*	‡*0·31*
1879 -	25,915,585	‡*974,029*	‡*3·62*	33,479,697	‡*85,064*	‡*0·25*	59,395,282	‡*1,059,093*	‡*1·75*
1880 -	27,200,464	1,284,879	4·96	35,761,303	2,281,606	6·81	62,961,767	3,566,485	6·00
‖1881 -	*27,692,000*	*491,536*	*1·81*	*36,801,000*	*1,039,697*	*2·91*	*64,493,000*	*1,531,233*	*2·43*
1882 -	28,796,813	1,104,813	3·99	37,740,315	939,315	2·55	66,537,128	2,044,128	3·17
1883 -	29,508,733	711,920	2·47	38,701,319	961,004	2·55	68,210,052	1,672,924	2·51
1884 -	30,030,450	521,717	1·77	37,670,592	‡*1,030,727*	‡*2·66*	67,701,042	‡*509,010*	‡*0·75*
1885 -	29,773,022	‡*257,428*	‡*0·86*	36,871,945	‡*798,647*	‡*2·12*	66,644,967	‡*1,056,075*	‡*1·56*
1886 -	30,244,938	471,916	1·59	36,370,439	‡*501,506*	‡*1·36*	66,615,377	‡*29,590*	‡*0·04*
1887 -	30,573,287	328,349	1·09	37,341,299	970,860	2·67	67,914,586	1,299,209	1·95
1888 -	30,984,090	410,803	1·34	38,755,780	1,414,481	3·79	69,739,870	1,825,284	2·69
1889 -	32,630,724	1,646,634	5·31	41,086,333	2,330,553	6·01	73,717,057	3,977,187	5·70
1890 -	34,327,965	1,697,241	5·20	42,220,382	1,134,049	2·76	76,548,347	2,831,290	3·84
1891 -	35,130,916	802,951	2·34	43,230,717	1,010,335	2·39	78,361,633	1,813,286	2·37
1892 -	35,662,816	531,900	1·51	42,866,498	‡*364,219*	‡*0·84*	78,529,314	167,681	0·21
1893 -	35,849,449	186,633	0·52	40,994,637	‡*1,871,861*	‡*4·37*	76,844,086	‡*1,685,228*	*2·15*

* Cannot be given for this year, several companies having omitted to make the necessary Returns.
† Increase of 1869 over 1867.
‡ Decrease.
‖ The Great Western Railway Company having changed the date to which its accounts were made up, the Returns of the Company published in the Parliamentary Paper C.—3279 of Session 1882 are for 11 months only. But the Company having obligingly supplied the Board of Trade with the necessary information, the figures given above for the year 1881 include approximately 12 months' working of the Great Western Railway. The amended figures are printed in *italics*.

No. 8.—Comparison of Numbers of Passenger-Journeys, Number of Season Ticket Holders, and Tonnage of Goods and Minerals conveyed, in each of the Years from 1884 to 1893.

Year.	PASSENGERS.					Minerals.	General Merchandise.
	1st Class.	2nd Class.	3rd Class and Parliamentary.	Total.	Holders of Season or Periodical Tickets.		
ENGLAND AND WALES.						Tons.	Tons.
1884	28,233,996	55,315,478	537,581,714	621,131,188	†697,678	155,432,872	64,542,283
1885	26,437,116	54,400,083	541,332,745	622,169,944	†860,342	156,220,110	62,527,984
1886	25,942,264	54,363,466	561,196,303	641,502,033	‡†932,673	154,725,763	61,569,049
						*17,185	
1887	25,260,910	58,005,233	564,508,813	647,774,956	†990,815	164,934,563	64,117,915
1888	24,267,049	57,443,882	572,461,987	654,172,918	†1,056,160	171,433,249	67,849,678
1889	24,300,309	57,459,343	601,503,922	683,263,574	†1,158,234	179,996,664	72,470,473
						*11,984	
1890	24,534,664	57,663,792	638,916,325	721,114,781	†1,164,498	184,818,223	74,319,330
						*12,609	
1891	24,743,885	58,377,530	663,434,407	746,555,822	†1,306,205	188,410,498	75,400,170
						*15,929	
1892	24,906,934	56,932,213	680,791,819	762,630,966	†1,511,972	185,327,982	75,148,521
						*13,680	
1893	24,490,458	55,257,414	689,586,343	769,334,215	†1,468,562	172,268,608	72,832,908
						*12,727	
SCOTLAND.							
1884	4,711,500	2,715,932	46,877,642	54,305,074	47,354	27,063,389	8,463,532
1885	4,489,702	2,476,842	48,955,881	55,922,425	†42,375	26,533,827	8,279,017
1886	5,003,892	2,288,304	58,069,896	65,362,092	44,534	26,246,665	8,422,724
1887	4,695,255	1,930,158	59,807,204	66,432,617	51,579	27,308,278	8,794,242
1888	4,626,971	1,643,992	62,142,386	68,413,349	†96,353	29,080,119	9,610,911
1889	4,379,855	834,640	65,692,969	70,907,464	†87,087	30,626,514	10,236,519
1890	4,307,666	862,383	70,045,935	75,215,984	68,468	29,800,519	9,871,788
1891	4,167,347	804,441	71,733,800	76,705,588	68,726	31,931,083	10,156,196
1892	4,191,964	726,845	74,238,603	79,157,412	72,302	34,492,068	10,322,668
1893	4,070,914	431,178	75,625,684	80,127,776	76,449	34,503,200	9,529,340
IRELAND.							
1884	1,637,043	4,233,810	13,684,745	19,555,598	21,659	1,119,295	2,706,515
1885	1,538,324	4,108,847	13,473,491	19,120,662	21,825	1,022,808	2,704,708
1886	1,384,682	4,034,715	13,300,868	18,720,265	22,479	968,969	2,676,288
1887	1,367,624	4,203,965	13,899,369	19,470,958	23,695	1,012,359	2,759,527
1888	1,367,697	4,216,045	14,329,155	19,912,897	24,396	1,063,248	2,711,234
1889	1,394,646	4,393,944	15,223,445	21,012,035	25,891	1,179,383	2,984,960
1890	1,344,737	4,333,679	15,734,865	21,413,281	26,255	1,146,531	3,150,427
1891	1,512,544	4,196,426	16,493,288	22,202,258	27,845	1,186,677	3,224,054
1892	1,503,426	4,188,755	16,954,829	22,647,010	28,236	1,252,714	2,999,418
						*69,327	
1893	1,487,610	4,301,048	17,926,403	23,715,061	29,865	1,064,500	3,092,245
						*37,719	
UNITED KINGDOM.							
1884	34,582,539	62,265,220	598,144,101	694,991,860	†766,691	183,615,556	75,712,330
1885	32,465,142	60,985,772	603,762,117	697,213,031	†924,542	183,776,745	73,511,709
1886	32,330,838	60,686,485	632,567,067	725,584,390	‡†999,686	181,941,397	72,668,061
						*17,185	
1887	31,323,789	64,139,356	638,215,386	733,678,531	†1,066,089	193,255,200	75,671,684
1888	30,261,717	63,303,919	648,933,528	742,499,164	†1,176,909	201,576,616	80,171,823
1889	30,074,810	62,687,927	682,420,336	775,183,073	†1,271,212	211,802,561	85,691,952
						*11,984	
1890	30,187,067	62,859,854	724,697,125	817,744,046	†1,259,221	215,765,273	87,341,545
						*12,609	
1891	30,423,776	63,378,397	751,661,495	845,463,668	†1,402,776	221,528,258	88,780,420
						*15,929	
1892	30,602,324	61,847,813	771,985,251	864,435,388	†1,612,510	221,072,764	88,470,607
						*83,007	
1893	30,048,982	59,989,640	783,138,430	873,177,052	†1,574,876	207,836,308	85,454,493
						*50,446	

* Not classified. † Including workmen's weekly tickets. ‡ Corrected figures.

No. 9.—Comparison of Number of Miles travelled by Passenger, Goods, and Mixed Trains in each of the Years from 1884 to 1893.

Year.	Miles travelled.			
	By Passenger Trains.	By Goods Trains.	By Mixed Trains.	Total.
ENGLAND AND WALES.				
1884	121,582,978	106,605,484	784,097	228,972,559
1885	124,132,488	106,022,908	431,712	230,587,108
1886	125,259,057	105,880,810	482,788	231,622,655
1887	127,658,994	108,368,230	467,875	236,495,099
1888	130,392,602	112,331,601	484,843	243,209,046
1889	135,523,228	117,796,137	506,821	253,826,186
1890	139,735,909	122,327,410	478,651	262,541,970
1891	143,699,648	126,080,917	411,497	270,192,062
1892	147,505,521	125,693,764	415,448	273,614,733
1893	148,555,526	119,296,126	447,720	268,299,372
SCOTLAND.				
1884	13,955,677	16,245,044	1,770,154	31,970,875
1885	14,313,018	16,039,715	1,673,400	32,026,133
1886	15,457,261	15,964,790	1,682,596	33,104,647
1887	16,033,316	16,135,764	1,681,746	33,850,826
1888	16,783,587	16,564,728	1,714,208	35,062,523
1889	17,153,786	17,068,374	1,714,552	35,936,712
1890	18,478,646	17,026,055	1,837,601	37,342,302
1891	19,426,738	17,975,858	1,996,902	39,399,498
1892	19,620,603	18,296,240	2,089,063	40,005,906
1893	19,751,651	18,064,792	2,115,972	39,932,415
IRELAND.				
1884	7,606,039	3,822,255	431,492	11,859,786
1885	8,012,700	3,866,715	371,399	12,250,814
1886	8,101,646	3,582,385	719,740	12,403,771
1887	8,129,324	3,864,570	512,956	12,506,850
1888	8,284,563	3,932,755	708,247	12,925,565
1889	8,405,861	4,076,722	871,472	13,354,055
1890	8,452,232	4,272,103	856,185	13,580,520
1891	8,632,166	4,443,370	931,029	14,006,565
1892	8,799,598	4,483,398	910,971	14,193,967
1893	9,058,070	4,420,102	1,131,843	14,610,015
UNITED KINGDOM.				
1884	143,144,694	126,672,783	2,985,743	272,803,220
1885	146,458,206	125,929,338	2,476,511	274,864,055
1886	148,817,964	125,427,985	2,885,124	277,131,073
1887	151,821,634	128,368,564	2,662,577	282,852,775
1888	155,460,752	132,829,084	2,907,298	291,197,134
1889	161,082,875	138,941,233	3,092,845	303,116,953
1890	166,666,787	143,625,568	3,172,437	313,464,792
1891	171,758,552	148,500,145	3,339,428	323,598,125
1892	175,925,722	148,473,402	3,415,482	327,814,606
1893	177,365,247	141,781,020	3,695,535	322,841,802

No. 10.—Comparison of Receipts (I.) from Passenger Traffic and (II.) from Goods Traffic.

I.—From Passenger Traffic in each of the Years from 1884 to 1893.

Year.	Receipts from Passenger Traffic.						
	Receipts from Passengers.					Excess Luggage, Parcels, Carriages, Horses, Dogs, and Mails.	Total.
	1st Class.	2nd Class.	3rd Class and Parliamentary.	Holders of Season or Periodical Tickets.	Total.		
England and Wales.							
	£	£	£	£	£	£	£
1884	2,833,677	2,642,329	15,206,778	1,564,311	22,247,095	3,337,101	25,584,196
1885	2,646,041	2,493,521	15,211,691	1,617,192	21,968,445	3,414,250	25,382,695
1886	2,600,628	2,419,683	15,585,808	1,682,158	22,288,277	3,482,959	25,771,236
1887	2,541,431	2,399,960	15,785,424	1,744,207	22,471,022	3,605,742	26,076,764
1888	2,488,509	2,316,466	16,004,935	1,813,022	22,622,932	3,651,456	26,274,388
1889	2,635,937	2,339,982	16,998,718	1,942,850	23,917,487	3,856,797	27,774,284
1890	2,636,595	2,277,980	18,164,065	2,049,487	25,128,127	4,079,567	29,207,694
1891	2,598,716	2,174,588	18,744,206	2,151,178	25,668,688	4,237,820	29,906,508
1892	2,583,280	2,049,351	19,087,641	2,242,254	25,962,526	4,395,217	30,357,743
1893	2,526,660	1,775,089	19,431,622	2,279,262	26,012,633	4,492,502	30,505,135
Scotland.							
1884	434,079	139,550	1,715,577	151,153	2,440,359	491,378	2,931,737
1885	399,579	122,873	1,697,283	155,663	2,375,398	504,982	2,880,380
1886	388,573	100,457	1,803,011	171,072	2,463,113	528,051	2,991,164
1887	374,001	78,971	1,815,462	178,362	2,446,796	543,468	2,990,264
1888	384,798	65,509	1,962,538	184,999	2,597,844	565,351	3,163,195
1889	380,290	46,503	2,026,624	197,528	2,650,945	593,654	3,244,599
1890	386,012	47,334	2,190,225	209,947	2,833,518	635,715	3,469,233
1891	371,751	44,017	2,241,724	221,425	2,878,917	649,409	3,528,326
1892	366,555	31,348	2,285,911	234,681	2,918,495	676,740	3,595,235
1893	346,576	12,451	2,315,597	241,412	2,916,036	691,113	3,607,149
Ireland.							
1884	213,261	323,129	683,685	48,027	1,268,102	246,415	1,514,517
1885	197,350	314,717	679,756	49,669	1,241,492	268,455	1,509,947
1886	172,765	303,474	679,564	48,898	1,204,701	277,837	1,482,538
1887	166,076	309,872	692,158	50,430	1,218,536	287,723	1,506,259
1888	166,974	310,431	722,761	52,991	1,253,157	293,350	1,546,507
1889	171,300	318,249	760,102	55,590	1,305,241	306,600	1,611,841
1890	171,084	320,391	788,557	56,950	1,336,982	314,056	1,651,038
1891	173,142	308,876	823,929	60,367	1,366,314	329,768	1,696,082
1892	171,793	295,669	843,403	61,017	1,371,882	337,956	1,709,838
1893	162,800	287,639	876,097	62,174	1,388,710	348,455	1,737,165
United Kingdom.							
1884	3,481,017	3,105,008	17,606,040	1,763,491	25,955,556	4,074,894	30,030,450
1885	3,242,970	2,931,111	17,588,730	1,822,524	25,585,335	4,187,687	29,773,022
1886	3,161,966	2,823,614	18,068,383	1,902,128	25,956,091	4,288,847	30,244,938
1887	3,081,508	2,788,803	18,293,044	1,972,999	26,136,354	4,436,933	30,573,287
1888	3,040,281	2,692,406	18,690,234	2,051,012	26,473,933	4,510,157	30,984,090
1889	3,187,527	2,704,734	19,785,444	2,195,968	27,873,673	4,757,051	32,630,724
1890	3,193,691	2,645,705	21,142,847	2,316,384	29,298,627	5,029,338	34,327,965
1891	3,143,609	2,527,481	21,809,859	2,432,970	29,913,919	5,216,997	35,130,916
1892	3,121,628	2,376,368	22,216,955	2,537,952	30,252,903	5,409,913	35,662,816
1893	3,036,036	2,075,179	22,623,316	2,582,848	30,317,379	5,532,070	35,849,449

No. 10.—Comparison of Receipts (I.) from Passenger Traffic and (II.) from Goods Traffic—*continued.*

II.—From Goods Traffic, and Proportion of Receipts from Passenger and Goods Traffic, in each of the Years from 1884 to 1893.

Year.	Receipts from Goods Traffic.				Total from Passenger and Goods Traffic.	Proportion of Receipts from Passenger and Goods Traffic.	
	Minerals.	General Merchandise.	Live Stock.	Total Goods Traffic.		Passenger.	Goods.
ENGLAND AND WALES.							
	£	£	£	£	£	Per cent.	Per cent.
1884	13,398,433	17,750,107	824,471	31,973,011	57,557,207	44	56
1885	13,169,551	17,312,933	834,489	*31,317,711	56,700,406	45	55
1886	12,990,568	16,943,646	882,617	*30,817,947	56,589,183	46	54
1887	13,572,625	17,250,668	867,998	*31,692,729	57,769,493	45	55
1888	13,995,263	18,001,156	890,179	32,886,598	59,160,986	44	56
1889	14,791,828	19,245,723	879,982	34,917,533	62,691,817	44	56
1890	15,296,186	19,781,781	898,213	35,976,180	65,183,874	45	55
1891	15,658,055	20,196,354	910,586	36,764,995	66,671,503	45	55
1892	15,279,696	20,122,011	880,884	36,282,591	66,640,334	46	54
1893	13,800,710	19,668,904	871,206	34,340,820	64,845,955	47	53
SCOTLAND.							
1884	2,001,690	2,212,556	187,589	*4,426,023	7,357,760	40	60
1885	1,955,861	2,162,288	187,255	4,305,404	7,185,784	40	60
1886	1,915,286	2,171,897	195,164	4,282,347	7,273,511	41	59
1887	1,946,349	2,228,040	194,111	4,368,500	7,358,764	41	59
1888	2,034,383	2,327,282	202,962	4,564,627	7,727,822	41	59
1889	2,116,465	2,464,452	207,124	4,788,041	8,032,640	40	60
1890	2,106,961	2,495,811	216,130	4,818,902	8,288,135	42	58
1891	2,258,394	2,522,258	221,945	5,002,597	8,530,923	41	59
1892	2,412,957	2,544,708	208,001	5,165,666	8,760,901	41	59
1893	2,487,734	2,480,781	226,341	5,194,856	8,802,005	41	59
IRELAND.							
1884	128,533	917,305	225,720	1,271,558	2,786,075	54	46
1885	120,818	906,943	221,069	1,248,830	2,758,777	55	45
1886	121,574	906,866	241,705	1,270,145	2,752,683	54	46
1887	126,235	922,460	231,375	1,280,070	2,786,329	54	46
1888	129,235	911,403	263,917	1,304,555	2,851,062	54	46
1889	143,874	984,183	252,702	1,380,759	2,992,600	54	46
1890	140,153	1,022,515	262,632	1,425,300	3,076,338	54	46
1891	147,855	1,057,477	257,793	1,463,125	3,159,207	54	46
1892	152,809	1,012,951	252,481	1,418,241	3,128,079	55	45
1893	132,299	1,059,523	267,139	1,458,961	3,196,126	54	46
UNITED KINGDOM.							
1884	15,528,656	20,879,968	1,237,780	*37,670,592	67,701,042	44	56
1885	15,246,230	20,382,164	1,242,813	*36,871,945	66,644,967	45	55
1886	15,027,428	20,022,409	1,319,486	*36,370,439	66,615,377	45	55
1887	15,645,209	20,401,168	1,293,484	*37,341,299	67,914,586	45	55
1888	16,158,881	21,239,841	1,357,058	38,755,780	69,739,870	44	56
1889	17,052,167	22,694,358	1,339,808	41,086,333	73,717,057	44	56
1890	17,543,300	23,300,107	1,376,975	42,220,382	76,548,347	45	55
1891	18,064,304	23,776,089	1,390,324	43,230,717	78,361,633	45	55
1892	17,845,462	23,679,670	1,341,366	42,866,498	78,529,314	45	55
1893	16,420,743	23,209,208	1,364,686	40,994,637	76,844,086	47	53

* Including receipts not classified.

No. 11.—Comparison of Railway Working Expenditure.

Expenditure† of Railway Companies in England and Wales, Scotland, and Ireland, in each of the Years 1884 to 1893.

Year.	Maintenance of Way, Works, &c.	Locomotive Power.	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses.	General Charges.	Rates and Taxes.	Government Duty.	Compensation. For Personal Injury.	Compensation. For Damage to or Loss of Goods.	Legal and Parliamentary Expenses.	Miscellaneous.	Total.
ENGLAND AND WALES.												
1884	£ 5,466,765	£ 8,101,991	£ 2,816,192	£ 9,747,891	£ 1,396,331	£ 1,664,660	£ 369,677	£ 147,395	£ 177,140	£ 280,778	£ 345,927	£ *30,514,162
		51,475										
1885	5,208,240	8,068,956	2,916,130	9,771,161	1,396,419	1,734,608	316,591	106,739	162,503	217,444	312,674	*30,198,294
		37,994		865								
1886	4,967,859	7,979,466	2,951,283	9,733,151	1,408,612	1,794,431	296,897	150,008	146,708	188,842	298,001	*29,895,180
		30,245		756								
1887	4,996,793	8,073,570	3,069,318	9,921,505	1,435,341	1,852,685	288,276	148,485	152,193	192,887	298,226	*30,444,931
		65,734		676								
1888	5,113,268	8,239,109	3,094,772	10,170,607	1,462,520	1,897,797	286,480	85,753	147,981	198,665	361,520	*31,074,571
		66,885		671								
1889	5,466,737	9,031,518	3,180,229	10,628,811	1,490,076	1,952,620	299,818	160,543	162,279	219,295	355,223	*32,972,045
		76,682		686								
1890	5,900,061	10,204,625	3,309,588	11,271,938	1,522,603	1,957,097	303,544	118,988	193,315	237,866	361,116	*35,406,400
		77,747		1,097								
1891	6,118,746	10,922,135	3,348,459	11,934,406	1,599,742	1,960,764	297,086	132,954	225,116	234,572	352,742	*37,147,706
		73,627		1,486								
1892	6,200,678	10,814,229	3,420,238	12,224,031	1,653,764	2,077,268	288,181	177,376	250,358	234,138	355,823	*37,699,889
		57,598		1,133								
1893	6,222,574	10,578,459	3,275,745	12,296,925	1,691,968	2,289,530	264,775	108,453	224,762	205,082	320,516	*37,481,811
		57,158										
SCOTLAND.												
1884	735,740	967,608	453,317	1,117,245	158,342	187,997	28,900	23,062	20,280	33,658	105,264	3,831,413
1885	686,808	911,556	440,972	1,123,682	157,943	181,745	26,865	16,805	13,826	20,929	107,116	3,688,247
1886	672,308	912,931	415,193	1,150,458	161,633	178,163	26,133	14,097	13,673	24,337	109,596	3,699,386
		20,864										
1887	676,662	922,536	418,827	1,151,767	165,480	180,190	24,454	11,113	13,000	30,561	110,724	3,705,314
1888	693,927	925,409	415,494	1,184,407	171,250	182,841	24,222	12,222	14,497	37,344	117,423	3,779,036
1889	694,499	1,002,124	436,605	1,241,835	171,908	197,790	24,135	16,422	17,367	40,977	118,854	3,962,516
1890	728,884	1,174,730	459,576	1,317,759	180,766	214,763	25,124	40,300	21,990	77,186	156,467	4,397,545
1891	753,877	1,287,274	468,882	1,392,926	176,075	211,593	24,174	19,835	27,113	72,526	128,692	4,562,967
1892	801,607	1,277,187	483,483	1,440,637	189,570	210,967	23,726	17,383	23,054	28,948	122,522	4,619,084
1893	845,974	1,250,774	480,322	1,440,249	183,666	213,875	21,922	12,495	15,100	22,044	121,306	4,607,727

* Total, less amount received by the North London Company for working other lines. The amount received in each year was as follows:—

	£		£		£		£		£
1884	52,060	1886	51,079	1888	51,457	1890	53,185	1892	54,926
1885	52,030	1887	50,758	1889	52,472	1891	54,129	1893	54,136

† Exclusive of Steamboat, Canal, Harbour, and Dock Expenditure.

No. 11.—Comparison of Railway Working Expenditure—*continued.*

Expenditure† of Railway Companies in England and Wales, Scotland, and Ireland, in each of the Years 1884 to 1893—*continued.*

Year.	Maintenance of Way, Works, &c.	Locomotive Power.	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses.	General Charges.	Rates and Taxes.	Government Duty.	Compensation. For Personal Injury.	Compensation. For Damage to or Loss of Goods.	Legal and Parliamentary Expenses.	Miscellaneous.	Total.
					IRELAND.							
	£	£	£	£	£	£	£	£	£	£	£	£
1884	420,034	396,194	129,888	413,926	81,922	85,034	—	13,200	4,980	9,554	10,607	1,566,207
		868										
1885	410,775	397,024	129,141	412,319	78,779	83,526	—	4,466	4,976	9,032	10,087	1,540,992
		867										
1886	396,230	375,474	128,473	406,303	76,699	79,994	—	26,984	5,574	8,770	10,545	1,515,906
		860										
1887	399,412	368,434	128,427	408,045	77,991	80,141	—	16,808	4,440	18,452	12,446	1,515,426
		830										
1888	389,535	376,316	143,822	401,125	88,506	83,504	—	4,752	3,372	9,812	12,086	1,513,681
		851										
1889	404,342	416,594	137,413	413,589	89,201	83,630	—	69,404	3,852	8,775	13,760	1,640,795
		235										
1890	407,979	466,595	140,040	452,292	92,609	79,227	—	66,474	4,696	25,966	14,663	1,750,541
1891	413,261	488,244	144,148	469,998	96,311	74,073	—	12,430	5,575	13,912	14,875	1,732,827
1892	401,287	477,800	137,664	482,886	100,440	80,323	—	4,243	7,408	16,677	15,431	1,724,159
1893	418,191	469,697	140,288	501,609	102,290	84,391	—	6,360	5,582	14,711	15,210	1,758,329
					UNITED KINGDOM.							
1884	6,622,539	9,465,793	3,899,397	11,279,062	1,636,595	1,937,691	398,577	183,657	202,400	323,990	461,798	*35,911,782
		52,343										
1885	6,305,823	9,377,536	3,486,243	11,307,162	1,633,141	1,999,879	343,456	128,010	181,305	247,405	429,877	*35,427,533
		38,861		865								
1886	6,036,397	9,267,871	3,494,949	11,289,912	1,646,944	2,052,588	323,030	191,089	165,955	221,949	418,142	*35,110,472
		51,969		756								
1887	6,072,867	9,364,540	3,616,572	11,481,317	1,678,812	2,113,016	312,730	176,406	169,633	241,900	421,396	*35,665,671
		66,564		676								
1888	6,196,730	9,540,834	3,654,088	11,756,139	1,722,276	2,164,142	310,702	102,727	165,850	245,821	491,029	*36,367,288
		67,736		671								
1889	6,565,578	10,450,236	3,754,247	12,284,235	1,751,185	2,234,040	323,953	246,369	183,498	269,047	487,837	*38,575,356
		76,917		686								
1890	7,036,924	11,845,950	3,909,204	13,041,989	1,795,978	2,251,087	328,668	225,762	220,001	341,018	532,246	*41,554,486
		77,747		1,097								
1891	7,285,884	12,697,653	3,961,489	13,797,330	1,872,128	2,246,430	321,260	165,219	257,804	321,010	496,309	*43,443,500
		73,627		1,486								
1892	7,403,572	12,569,216	4,041,385	14,147,554	1,943,774	2,368,558	311,907	199,002	280,820	279,763	493,776	*44,043,132
		57,598		1,133								
1893	7,486,739	12,298,930	3,896,355	14,238,783	1,977,924	2,587,796	286,697	127,308	245,444	241,837	457,032	*43,847,867
		57,158										

* *See* Note on page 30.

† Exclusive of Steamboat, Canal, Harbour, and Dock Expenditure.

No. 12.—Comparison of Receipts per Mile of Railway open, from Passenger and Goods Traffic, in each of the Years from 1884 to 1893.

Year.	Passenger Traffic.							Goods Traffic.			Total from Passenger and Goods Traffic.
	1st Class.	2nd Class.	3rd Class and Parliamentary.	Season Ticket Holders.	Total.	Excess Luggage, Parcels, Carriages, Horses, Dogs, and Mails.	Total from Passenger Traffic.	Minerals.	General Merchandise.	Total from Goods Traffic.*	
					ENGLAND AND WALES.						
	£	£	£	£	£	£	£	£	£	£	£
1884	212	198	1,140	117	1,667	251	1,918	1,004	1,331	2,397	4,315
1885	194	183	1,118	119	1,614	251	1,865	967	1,272	2,301	4,166
1886	190	177	1,139	123	1,629	255	1,884	950	1,239	2,253	4,137
1887	184	173	1,142	126	1,625	261	1,886	982	1,248	2,292	4,178
1888	178	166	1,145	129	1,618	261	1,879	1,001	1,287	2,352	4,231
1889	188	167	1,211	138	1,704	275	1,979	1,054	1,371	2,488	4,467
1890	187	161	1,287	145	1,780	289	2,069	1,083	1,401	2,548	4,617
1891	184	154	1,324	152	1,814	299	2,113	1,106	1,427	2,597	4,710
1892	181	144	1,340	158	1,823	309	2,132	1,073	1,413	2,548	4,680
1893	175	123	1,346	158	1,802	311	2,113	956	1,362	2,378	4,491
					SCOTLAND.						
1884	145	47	572	50	814	164	978	667	738	1,476	2,454
1885	134	41	569	52	796	170	966	656	725	1,444	2,410
1886	129	33	597	56	815	175	990	634	719	1,417	2,407
1887	121	26	590	58	795	176	971	632	724	1,419	2,390
1888	124	21	634	60	839	182	1,021	657	751	1,474	2,495
1889	122	15	650	63	850	191	1,041	679	790	1,535	2,576
1890	122	15	693	66	896	201	1,097	666	789	1,524	2,621
1891	117	14	707	70	908	205	1,113	712	795	1,577	2,690
1892	115	10	717	74	916	212	1,128	757	798	1,620	2,748
1893	108	4	720	75	907	215	1,122	774	772	1,616	2,738
					IRELAND.						
1884	84	128	271	19	502	98	600	51	363	504	1,104
1885	77	122	264	19	482	104	586	47	352	485	1,071
1886	66	115	258	19	458	105	563	46	345	483	1,046
1887	62	116	259	19	456	107	563	47	345	479	1,042
1888	61	114	264	19	458	108	566	47	333	477	1,043
1889	62	114	272	20	468	110	578	52	353	495	1,073
1890	61	115	283	20	479	112	591	50	366	510	1,101
1891	60	108	288	21	477	115	592	52	369	511	1,103
1892	60	102	291	21	474	117	591	53	350	490	1,081
1893	54	96	293	21	464	117	581	44	354	488	1,069
					UNITED KINGDOM.						
1884	185	165	933	93	1,376	216	1,592	823	1,107	1,997	3,589
1885	169	153	918	95	1,335	218	1,553	795	1,063	1,924	3,477
1886	164	146	935	98	1,343	222	1,565	777	1,036	1,881	3,446
1887	157	143	934	101	1,335	227	1,562	799	1,042	1,907	3,469
1888	153	136	943	104	1,336	228	1,564	816	1,072	1,956	3,520
1889	160	136	992	110	1,398	238	1,636	855	1,138	2,060	3,696
1890	159	132	1,053	116	1,460	250	1,710	874	1,161	2,103	3,813
1891	156	125	1,080	121	1,482	258	1,740	895	1,178	2,141	3,881
1892	154	117	1,093	125	1,489	266	1,755	878	1,165	2,109	3,864
1893	147	100	1,096	125	1,468	268	1,736	795	1,124	1,986	3,722

* Including receipts for the carriage of Live Stock.

No. 13.—Comparison of Total Railway Receipts from Passenger Traffic and from Goods Traffic, per Train Mile and per Mile of Open Railway, of Railway Companies in England and Wales, Scotland, and Ireland, in each of the Years from 1884 to 1893.

Year.	Per Train Mile.				Per Open Mile of Railway.			
	England and Wales.	Scotland.	Ireland.	United Kingdom.	England and Wales.	Scotland.	Ireland.	United Kingdom.
FROM PASSENGER TRAFFIC.								
	d.	*d.*	*d.*	*d.*	£	£	£	£
1884	*50·44	*46·37	*46·81	*49·86	1,918	978	600	1,592
1885	*49·03	*44·40	*44·32	*48·32	1,865	966	586	1,553
1886	*49·35	*42·90	*41·86	*48·27	1,884	990	563	1,565
1887	*49·00	*41·42	*43·37	*47·90	1,886	971	563	1,562
1888	*48·34	*41·84	*43·42	*47·37	1,879	1,021	566	1,564
1889	*49·15	*41·87	*44·80	*48·17	1,979	1,040	577	1,636
1890	*50·13	*41·68	*45·08	*48·94	2,069	1,097	591	1,710
1891	*49·91	*40·29	*45·27	*48·59	2,113	1,112	592	1,740
1892	*49·41	*40·65	*44·80	*48·13	2,132	1,128	591	1,755
1893	*49·28	*40·46	*43·52	*48·00	2,113	1,122	581	1,736
FROM GOODS TRAFFIC.								
1884	*71·86	*63·01	*78·63	*70·91	2,397	1,476	504	1,997
1885	*70·79	*62·20	*75·89	*69·85	2,301	1,444	485	1,924
1886	*69·79	*62·10	*81·86	*69·15	2,253	1,417	483	1,881
1887	*70·13	*62·82	*77·04	*69·42	2,293	1,419	479	1,907
1888	*70·20	*64·00	*76·75	*69·62	2,352	1,474	477	1,956
1889	*71·06	*65·19	*78·98	*70·54	2,488	1,536	495	2,060
1890	*70·48	*65·68	*77·01	*70·11	2,548	1,524	511	2,103
1891	*69·88	*64·45	*75·97	*69·40	2,597	1,577	511	2,141
1892	*69·26	*65·38	*73·06	*68·90	2,548	1,620	490	2,109
1893	*69·08	*66·55	*75·92	*68·97	2,378	1,616	488	1,986
FROM PASSENGER AND GOODS TRAFFIC.								
1884	60·33	55·23	56·38	59·56	4,315	2,453	1,103	3,589
1885	59·01	53·85	54·05	58·19	4,166	2,410	1,071	3,477
1886	58·64	52·73	53·26	57·69	4,137	2,407	1,046	3,446
1887	58·63	52·17	53·47	57·63	4,179	2,390	1,042	3,469
1888	58·38	52·90	52·94	57·48	4,231	2,495	1,043	3,520
1889	59·28	53·65	53·78	58·37	4,467	2,576	1,072	3,696
1890	59·59	53·27	54·37	58·61	4,617	2,621	1,102	3,813
1891	52·22	51·97	54·13	58·12	4,710	2,689	1,103	3,881
1892	58·45	52·56	52·89	57·49	4,680	2,748	1,081	3,864
1893	58·01	52·90	52·50	57·13	4,491	2,738	1,069	3,722

* Exclusive of receipts on railways in cases where the traffic is conveyed by mixed trains.

No. 14.—Comparison of Railway Working Expenditure, (I.) per Train Mile, and (II.) per Mile of Open Railway.

I.—Comparison of Working Expenditure * by Railway Companies in England and Wales, Scotland, and Ireland, per Train Mile, in each of the Years from 1884 to 1893.

Year.	Maintenance of Way, Works, &c.	Locomotive Power.	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses.	General Charges.	Rates and Taxes.	Government Duty.	Compensation.		Legal and Parliamentary Expenses.	Miscellaneous.	Total.
								For Personal Injury.	For Damage or Loss of Goods.			
					ENGLAND AND WALES.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1884	5·72	8·52	2·96	10·20	1·46	1·74	·39	·15	·19	·29	·36	31·98
1885	5·41	8·41	3·04	10·15	1·45	1·81	·33	·11	·17	·23	·33	31·43
1886	5·14	8·28	3·06	10·07	1·46	1·86	·31	·16	·15	·20	·31	30·98
1887	5·07	8·22	3·13	10·05	1·46	1·88	·29	·15	·15	·20	·30	30·90
1888	5·04	8·16	3·07	10·02	1·44	1·87	·28	·08	·15	·20	·36	30·66
1889	5·16	8·58	3·02	10·04	1·41	1·85	·28	·15	·15	·21	·34	31·18
1890	5·39	9·36	3·04	10·29	1·39	1·79	·28	·11	·18	·22	·33	32·37
1891	5·43	9·73	2·99	10·59	1·42	1·74	·26	·12	·20	·21	·31	33·00
1892	5·43	9·51	3·01	10·71	1·45	1·82	·25	·16	·22	·20	·31	33·07
1893	5·56	9·48	2·94	10·99	1·51	2·04	·24	·10	·20	·18	·29	33·53
					SCOTLAND.							
1884	5·52	7·26	3·40	8·39	1·19	1·41	·22	·17	·15	·25	·79	28·76
1885	5·15	6·83	3·30	8·42	1·18	1·36	·20	·13	·10	·16	·80	27·64
1886	4·87	6·73	3·06	8·34	1·17	1·29	·19	·10	·10	·18	·79	26·82
1887	4·80	6·54	2·97	8·17	1·17	1·28	·17	·08	·09	·22	·79	26·27
1888	4·75	6·34	2·84	8·11	1·17	1·25	·17	·08	·10	·26	·80	25·87
1889	4·64	6·69	2·92	8·29	1·15	1·32	·16	·11	·12	·27	·79	26·46
1890	4·69	7·55	2·95	8·47	1·16	1·38	·16	·26	·14	·50	1·01	28·26
1891	4·59	7·84	2·86	8·49	1·07	1·29	·15	·12	·17	·44	·78	27·80
1892	4·81	7·66	2·90	8·64	1·14	1·27	·14	·10	·14	·17	·74	27·71
1893	5·08	7·52	2·89	8·66	1·10	1·29	·13	·07	·09	·13	·73	27·69
					IRELAND.							
1884	8·50	8·03	2·63	8·38	1·66	1·72	†—	·27	·10	·19	·21	31·69
1885	8·05	7·79	2·53	8·08	1·54	1·64	†—	·09	·10	·18	·20	30·19
1886	7·67	7·28	2·49	7·86	1·48	1·55	†—	·52	·11	·17	·20	29·33
1887	7·66	7·08	2·47	7·83	1·50	1·54	†—	·32	·09	·35	·24	29·08
1888	7·23	7 00	2·68	7·45	1·64	1·55	†—	·09	·06	·18	·22	28·11
1889	7·27	7·49	2·47	7·44	1·60	1·50	†—	1·25	·07	·16	·25	29·49
1890	7·21	8·25	2·47	7·99	1·64	1·40	†—	1·17	·08	·46	·26	30·94
1891	7·08	8·37	2·47	8·05	1·65	1·27	†—	·21	·10	·24	·25	29·69
1892	6·79	8·08	2·32	8·16	1·70	1·36	†—	·07	·13	·28	·26	29·15
1893	6·87	7·72	2·30	8·24	1·68	1·39	†—	·10	·09	·24	·25	28·88
					UNITED KINGDOM.							
1884	5·82	8·35	3·00	9·91	1·44	1·70	·37	·16	·18	·29	·41	31·59
1885	5·50	8·20	3·05	9·86	1·43	1·75	·31	·11	·16	·22	·38	30·93
1886	5·22	8·05	3·04	9·76	1·43	1·78	·29	·17	·14	·19	·36	30·41
1887	5·15	7·97	3·08	9·73	1·42	1·79	·28	·15	·14	·21	·36	30·26
1888	5·10	7·89	3·02	9·68	1·42	1·78	·27	·08	·14	·20	·40	29·97
1889	5·19	8·31	2·98	9·71	1·39	1·77	·27	·20	·15	·21	·39	30·54
1890	5·38	9·10	3·00	9·97	1·38	1·72	·26	·17	·17	·26	·41	31·82
1891	5·40	9·45	2·95	10·22	1·39	1·66	·25	·12	·19	·24	·37	32·22
1892	5·42	9·22	2·96	10·35	1·42	1·73	·24	·15	·21	·20	·36	32·24
1893	5·56	9·16	2·90	10·57	1·47	1·92	·22	·09	·18	·18	·34	32·60

* Exclusive of steamboat, canal, harbour, and dock expenditure.
† The railway passenger duty is not charged in Ireland.

No. 14.—Comparison of Railway Working Expenditure (I.) per Train Mile, and (II.) per Mile of Open Railway—*continued.*

II.—Comparison of Working Expenditure* by Railway Companies in England and Wales, Scotland, and Ireland, per Mile of Open Railway, in each of the Years 1884 to 1893.

Year.	Maintenance of Way, Works, &c.	Locomotive Power.	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses.	General Charges.	Rates and Taxes.	Government Duty.	Compensation.		Legal and Parliamentary Expenses.	Miscellaneous.	Total.
								For Personal Injury.	For Damage or Loss of Goods.			
ENGLAND AND WALES.												
	£	£	£	£	£	£	£	£	£	£	£	£
1884	409	609	212	729	105	125	28	11	13	21	26	2,287
1885	382	594	215	716	103	127	23	8	12	16	23	2,219
1886	363	584	216	710	103	131	22	11	11	14	22	2,186
1887	361	586	223	716	104	134	21	11	11	14	22	2,202
1888	365	592	222	726	105	136	20	6	11	14	26	2,222
1889	389	646	228	756	106	139	21	11	12	16	25	2,349
1890	417	726	235	797	108	139	21	8	14	17	26	2,508
1891	432	774	237	842	113	138	21	9	16	17	25	2,624
1892	435	761	241	857	116	145	20	13	18	16	25	2,647
1893	430	734	228	851	117	158	18	8	16	14	22	2,596
SCOTLAND.												
1884	245	323	151	373	53	63	10	8	7	11	35	1,278
1885	230	306	148	377	53	61	9	6	5	7	36	1,237
1886	222	307	139	381	53	59	9	5	5	8	36	1,224
1887	220	300	136	374	54	59	8	4	4	10	36	1,204
1888	224	299	134	382	55	59	8	4	5	12	38	1,220
1889	223	322	140	398	55	63	8	5	6	13	38	1,271
1890	230	372	145	417	57	68	8	13	7	24	49	1,391
1891	238	406	148	439	55	67	8	6	8	23	41	1,439
1892	251	401	152	452	60	66	7	6	7	9	38	1,449
1893	263	389	149	448	57	66	7	4	5	7	38	1,433
IRELAND.												
1884	166	157	52	164	32	34	†—	5	2	4	4	620
1885	160	154	50	160	31	32	†—	2	2	4	4	598
1886	151	143	49	154	29	30	†—	10	2	3	4	576
1887	149	138	48	153	29	30	†	6	2	7	5	567
1888	142	138	53	147	32	31	†—	2	1	4	4	554
1889	145	150	49	148	32	30	†—	25	1	3	5	588
1890	146	167	50	162	33	28	†—	24	2	9	5	627
1891	144	171	50	164	34	26	†—	4	2	5	5	605
1892	139	165	47	167	35	28	†—	1	3	6	5	596
1893	140	157	47	168	34	28	†—	2	2	5	5	588
UNITED KINGDOM.												
1884	350	503	181	597	87	103	24	10	11	17	24	1,904
1885	328	490	182	589	85	104	21	7	9	13	22	1,848
1886	312	480	181	583	85	106	19	10	9	11	22	1,816
1887	310	480	185	586	86	108	19	9	9	12	22	1,822
1888	312	483	185	593	87	109	18	5	8	12	25	1,836
1889	329	526	189	615	88	112	19	12	9	13	24	1,934
1890	350	592	195	649	89	112	19	11	11	17	27	2,070
1891	360	631	197	683	93	111	18	8	13	16	25	2,152
1892	364	620	199	695	96	116	18	10	14	14	24	2,167
1893	362	597	189	689	96	125	16	6	12	12	22	2,124

* Exclusive of steamboat, canal, harbour, and dock expenditure.
† The railway passenger duty is not charged in Ireland.

No 15.—Comparison of Receipts per Train Mile, and Proportion per Cent. of Expenditure

Note.—The receipts of the lines worked

Year.	Caledonian.	Furness.	Great Eastern.	Great Northern.	Great Northern of Ireland.	Great North of Scotland.	Great Western.	Great Southern and Western of Ireland.	Lancashire and Yorkshire.
FROM PASSENGER TRAFFIC.									
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1884	44·96	36·71	50·41	40·51	45·55	48·22	58·33	52·81	44·04
1885	43·28	35·93	49·53	39·55	45·04	45·57	58·26	49·30	42·19
1886	42·28	34·35	48·95	39·44	43·82	40·29	57·85	46·15	42·74
1887	41·67	34·76	47·99	38·78	42·87	38·17	56·18	49·44	43·68
1888	43·25	36·44	47·24	39·23	43·87	35·87	55·19	48·08	43·31
1889	42·69	37·97	48·35	39·93	44·87	36·94	55·71	49·12	42·31
1890	42·52	38·23	49·08	40·74	45·77	38·13	55·58	49·46	42·61
1891	40·48	37·72	49·20	40·77	46·31	38·90	54·25	49·12	43·67
1892	40·97	36·76	48·32	40·93	46·29	39·69	53·71	48·28	44·39
1893	41·11	36·59	48·38	41·91	45·78	40·10	52·32	46·54	44·84
FROM GOODS TRAFFIC.									
1884	64·23	125·34	68·15	60·31	88·78	60·03	64·10	73·25	96·09
1885	63·46	121·97	65·77	59·65	79·55	55·90	63·49	70·91	94·09
1886	64·33	120·53	63·39	59·27	81·61	62·90	62·87	75·39	93·79
1887	66·75	122·13	62·04	59·77	80·65	63·38	63·75	74·19	93·93
1888	69·84	126·01	61·62	58·83	79·73	62·65	63·60	74·01	94·80
1889	70·30	129·26	62·03	60·81	81·87	64·23	64·41	74·89	95·68
1890	70·19	123·25	61·72	60·91	82·97	62·26	62·99	73·24	94·24
1891	69·17	117·42	61·21	61·20	83·53	63·64	62·00	71·07	95·45
1892	69·79	113·57	61·78	60·89	80·40	62·17	61·22	69·51	95·80
1893	70·91	115·44	62·42	61·67	81·54	61·70	60·31	70·66	98·45
FROM PASSENGER AND GOODS TRAFFIC.									
1884	55·62	84·92	57·35	50·09	58·31	53·60	61·33	61·06	65·58
1885	54·28	80·94	55·90	49·30	55·94	50·23	60·96	57·58	63·02
1886	53·71	79·01	54·67	49·07	55·49	48·97	60·36	56·97	63·56
1887	54·50	80·63	53·57	48·93	54·61	47·42	59·99	59·04	64·41
1888	56·66	83·95	52·95	48·83	55·20	45·41	59·45	57·93	64·51
1889	56·50	86·55	53·83	50·13	56·63	46·60	60·10	59·03	63·69
1890	55·95	83·43	54·10	50·54	57 58	46·84	59·28	58·81	63·02
1891	54·44	79·87	53·95	50·69	58·15	48·01	58·11	57·87	64·23
1892	55·11	75·73	53·56	50·57	57·17	48·00	57·43	56·50	64·60
1893	55·61	75·99	53·40	51·02	57·28	48·18	56·22	55·74	62·01
PROPORTION OF EXPENDITURE TO RECEIPTS.									
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
1884	54	47	53	56	54	58	48	55	54
1885	52	50	53	56	54	53	48	57	58
1886	52	48	53	57	54	52	48	55	56
1887	51	49	52	57	53	52	48	54	54
1888	48	46	52	56	50	53	48	54	52
1889	49	44	52	57	58	52	49	52	54
1890	53	47	54	58	61	53	51	55	56
1891	53	51	56	59	51	50	52	53	57
1892	52	52	57	59	51	50	53	55	59
1893	53	54	59	60	50	51	55	54	59

to RECEIPTS, for the Years from 1884 to 1893, of the following Railway Companies.

by the several Companies are included.

London and North-Western.	London and South-Western.	London, Brighton, and South Coast.	Manchester, Sheffield, and Lincolnshire.	Midland.	North British.	North-Eastern.	South-Eastern.	Taff Vale.	YEAR.
				FROM PASSENGER TRAFFIC.					
d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	
50·11	57·05	56·61	46·48	41·60	45·74	44·94	65·87	77·44	1884
49·44	56·43	53·98	45·93	40·51	43·67	43·57	64·24	75·07	1885
50·94	57·16	57·10	44·68	40·49	42·81	42·71	66·97	70·65	1886
51·37	56·92	56·30	45·58	40·58	40·12	43·03	64·21	70·73	1887
51·40	55·47	55·01	45·05	39·53	40·26	42·53	63·89	68·42	1888
52·08	56·42	56·17	46·28	39·21	41·35	44·91	64·05	73·93	1889
52·40	56·83	57·52	47·88	41·35	40·57	46·39	63·75	81·21	1890
52·46	57·17	57·66	48·46	40·92	39·00	44·99	62·75	85·63	1891
51·69	57·49	57·86	47·14	40·63	39·34	44·00	60·43	82·71	1892
52·64	57·47	58·17	44·95	41·70	39·57	42·83	60·50	74·27	1893
				FROM GOODS TRAFFIC.					
79·48	68·93	90·03	76·44	61·16	59·62	76·00	81·75	93·75	1884
78·37	67·87	89·52	75·05	60·99	59·38	75·54	81·10	91·29	1885
78·48	65·37	90·83	71·84	60·28	58·02	73·71	79·32	85·70	1886
78·70	67·73	93·68	68·32	60·88	58·14	73·48	76·99	88·96	1887
79·34	67·93	94·05	67·15	60·75	58·88	74·12	76·57	95·70	1888
79·05	69·47	96·33	67·31	61·19	61·33	76·11	78·31	90·63	1889
78·87	67·63	96·86	66·46	60·75	62·41	78·14	77·49	80·51	1890
79·11	67·94	95·58	66·24	61·22	60·39	76·02	78·15	76·09	1891
77·19	67·59	95·07	64·29	60·68	61·59	73·70	78·05	79·30	1892
77·77	66·66	90·16	60·11	59·77	63·36	73·37	76·42	81·37	1893
				FROM PASSENGER AND GOODS TRAFFIC.					
64·29	60·31	62·49	65·00	53·19	53·39	63·10	69·35	91·16	1884
63·37	59·58	60·15	63·71	52·53	52·20	61·88	67·87	88·72	1885
64·18	59·47	63·07	61·39	51·94	50·86	60·18	69·72	83·23	1886
64·56	59·96	62·80	60·03	52·33	49·56	60·28	66·97	86·09	1887
64·97	58·92	61·65	59·26	51·96	49·97	60·66	66·65	91·16	1888
65·23	60·01	62·82	60·02	52·19	51·91	63·06	67·10	87·65	1889
65·21	59·82	64·08	59·94	53·10	51·39	64·70	66·67	80·65	1890
65·42	60·20	64·15	59·96	53·22	49·62	62·59	66·12	78·16	1891
64·02	60·32	64·35	58·21	52·71	50·38	60·16	64·27	80·05	1892
64·43	59·98	63·66	54·19	52·15	51·29	59·88	63·93	79·67	1893
				PROPORTION OF EXPENDITURE TO RECEIPTS.					
Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	
52	59	51	50	53	49	54	51	58	1884
52	59	50	50	53	50	55	51	57	1885
52	57	48	48	53	48	54	50	57	1886
53	54	48	51	53	48	54	50	56	1887
53	54	48	50	53	47	54	51	55	1888
53	53	47	49	53	47	53	51	56	1889
55	54	49	52	54	51	56	52	60	1890
56	54	51	52	55	53	57	55	64	1891
57	54	51	52	56	53	60	56	57	1892
57	55	52	60	59	50	58	56	59	1893

No. 16.—Comparison of Expenditure per Train Mile for the Years

Note.—The expenditure of the lines worked

Year.	Caledonian.	Furness.	Great Eastern.	Great Northern.	Great Northern of Ireland.	Great North of Scotland.	Great Western.	Great Southern and Western of Ireland.	Lancashire and Yorkshire.
MAINTENANCE OF WAY.									
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1884	5·04	7·06	4·98	4·56	9·06	9·32	6·90	8·13	6·23
1885	4·57	8·93	4·78	4·43	8·63	6·26	6·51	7·90	6·09
1886	4·39	7·55	4·62	4·43	8·05	6·06	6·25	7·23	5·35
1887	4·48	8·50	4·45	4·67	8·06	5·84	6·29	7·59	5·19
1888	4·22	6·63	4·36	4·42	7·58	5·61	6·21	7·35	5·35
1889	4·10	7·12	4·42	4·86	7·58	5·09	6·37	7·22	5·69
1890	4·15	7·86	4·66	4·91	7·79	4·70	6·46	7·29	5·72
1891	4·23	7·42	4·80	4·93	8·10	3·86	6·32	6·70	5·63
1892	4·41	6·56	4·79	4·87	7·41	3·80	6·40	6·51	5·88
1893	5·60	6·58	4·74	4·98	7·64	3·94	6·60	6·32	6·10
LOCOMOTIVE POWER.									
1884	8·13	10·38	8·56	7·62	8·35	6·62	7·69	9·09	8·10
1885	7·11	10·04	8·40	7·60	8·05	6·42	7·58	8·86	9·33
1886	7·19	9·37	8·06	7·57	7·19	6·17	7·57	8·36	9·65
1887	6·97	9·56	7·89	7·58	6·66	6·14	7·64	8·29	9·45
1888	6·62	9·82	7·92	7·80	6·72	5·94	7·52	8·09	8·36
1889	6·91	9·92	8·23	8·25	7·16	6·32	7·92	8·51	9·44
1890	8·03	10·37	8·75	8·80	7·83	6·72	8·55	9·30	10·30
1891	8·25	11·24	9·12	9·27	7·70	7·07	8·95	9·18	11·13
1892	7·88	10·84	9·00	9·16	7·76	7·09	8·82	8·69	11·12
1893	7·69	10·09	9·57	9·05	7·33	7·04	8·57	8·24	11·64
REPAIRS AND RENEWALS OF ROLLING STOCK.									
1884	3·99	6·59	2·63	2·46	2·94	2·78	2·43	2·95	3·94
1885	3·76	5·90	2·38	2·37	2·83	2·19	2·48	2·92	4·17
1886	3·45	5·85	2·35	2·42	2·62	1·77	2·48	2·98	3·25
1887	3·50	6·32	2·27	2·37	2·58	1·66	2·49	3·00	3·64
1888	3·42	6·60	2·29	2·37	2·60	1·68	2·58	3·09	2·80
1889	3·41	6·21	2·34	2·40	2·49	1·71	2·69	2·88	2·49
1890	3·48	6·20	2·47	2·49	2·54	1·68	2·70	2·80	2·48
1891	3·26	6·26	2·53	2·46	2·37	1·67	2·70	2·62	2·66
1892	3·25	6·53	2·48	2·38	2·28	1·72	2·70	2·68	3·52
1893	3·16	8·38	2·27	2·28	2·12	1·69	2·68	2·56	3·14
TRAFFIC CHARGES.									
1884	8·50	10·29	10·19	9·57	7·88	7·30	8·62	9·47	13·21
1885	8·50	10·11	10·05	9·53	7·75	7·24	8·67	9·29	12·98
1886	8·55	9·92	9·91	9·46	7·53	7·16	8·66	9·16	12·76
1887	8·40	10·05	9·71	9·44	7·43	6·88	8·76	9·60	12·55
1888	8·47	9·93	9·59	9·39	7·43	6·77	8·69	8·63	12·97
1889	8·61	9·89	9·52	9·40	7·49	6·86	8·69	8·40	12·73
1890	8·84	9·99	9·67	9·54	8·20	6·98	8·80	9·30	12·67
1891	9·00	10·51	9·95	9·85	8·20	7·01	8·87	8·93	13·45
1892	9·27	10·56	10·03	9·92	8·49	7·20	8·99	9·24	13·52
1893	9·24	10·49	10·32	10·53	8·63	7·45	9·06	9·08	13·45

from 1884 to 1893, of the following Railway Companies.

by the several Companies is included.

London and North-Western.	London and South-Western.	London, Brighton, and South Coast.	Manchester, Sheffield, and Lincolnshire.	Midland.	North British.	North-Eastern.	South-Eastern.	Taff Vale.	Year.
				MAINTENANCE OF WAY.					
d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	
6·07	6·53	4·90	4·40	4·48	5·07	6·19	4·97	7·25	1884
5·81	6·25	4·76	4·44	4·14	4·97	5·60	4·79	7·92	1885
5·81	6·07	4·82	4·13	4·03	4·50	4·71	4·51	7·24	1886
5·66	5·83	5·17	4·06	3·74	4·20	4·64	4·14	7·55	1887
5·94	5·73	5·05	4·06	3·53	4·07	4·76	4·40	7·54	1888
5·94	5·78	4·76	4·06	3·57	4·16	5·21	4·16	7·24	1889
6·08	5·91	4·71	4·12	4·10	4·33	6·01	4·04	6·50	1890
6·12	5·80	4·96	4·18	4·37	4·43	5·95	4·42	6·05	1891
6·16	5·90	5.20	4·21	4·34	4·98	5·72	4·43	5·46	1892
6·47	6·10	5·32	4·45	4·34	4·74	5·61	4·23	5·86	1893
				LOCOMOTIVE POWER.					
7·86	9·68	8·97	7·13	7·67	6·46	10·75	8·61	17·52	1884
7·82	9·86	8·56	6·74	7·44	6·42	10·43	8·47	16·69	1885
7·89	9·41	8·38	6·18	7·14	6·13	10·28	8·10	16·00	1886
7·96	8·53	8·29	6·19	7·31	5·96	10·23	7·75	15·61	1887
7·90	8·18	8·30	6·26	7·32	5·88	10·34	7·80	16·52	1888
8·13	8·40	8·76	6·96	7·67	6·37	10·72	8·47	16·10	1889
9·01	8·92	9·59	8·05	8·44	6·99	11·97	9·36	18·09	1890
9·55	9·20	9·88	8·33	8·81	7·42	11·87	9·81	19·30	1891
9·18	9·13	9·59	8·27	8·71	7·33	11·19	9·44	16·66	1892
9·26	8·61	9·20	8·74	9·01	7·08	10·63	9·04	15·79	1893
				REPAIRS AND RENEWALS OF ROLLING STOCK.					
2·34	2·68	2·48	2·81	3·64	2·91	4·35	2·79	4·55	1884
2·40	2·73	2·18	2·82	3·91	2·90	5·09	2·86	3·71	1885
2·63	2·44	2·11	2·63	4·15	2·66	5·44	3·03	3·17	1886
2·65	2·44	2·15	2·52	4·25	2·54	5·65	2·98	3·76	1887
2·65	2·44	2·14	2·45	4·21	2·45	5·40	3·04	3·64	1888
2·50	2·52	1·90	2·34	4·10	2·60	5·33	3·01	3·42	1889
2·45	2·55	2·03	2·31	3·94	2·67	5·61	3·02	3·06	1890
2·56	2·60	2·17	2·29	3·65	2·69	5·22	3·03	2·14	1891
2·54	2·58	2·44	2·17	3·56	2·83	5·07	2·93	1·92	1892
2·55	2·56	3·08	2·22	3·28	2·82	4·86	3·02	2·21	1893
				TRAFFIC CHARGES.					
12·21	11·23	8·99	11·88	9·38	8·36	9·17	9·80	10·31	1884
11·93	11·44	8·85	11·95	9·28	8·39	9·27	9·80	10·31	1885
12·04	11·13	9·01	11·42	9·36	8·21	8·82	10·04	10·05	1886
12·24	10·93	8·88	11·11	9·40	8·02	8·69	9·92	9·85	1887
12·35	10·63	8·62	11·19	9·40	7·88	8·59	10·05	9·81	1888
12·42	10·36	8·56	10·99	9·40	8·18	8·74	10·26	10·09	1889
12·87	10·27	8·89	11·29	9·66	8·29	9·22	10·29	11·17	1890
13·32	10·31	9·00	11·37	10·03	8·15	9·70	10·69	12·04	1891
13·29	10·35	8·98	11·16	10·17	8·19	10·31	10·60	11·70	1892
13·83	10·53	9·17	11·76	11·25	8·15	9·90	10·90	11·63	1893

No. 16.—Comparison of Expenditure per Train Mile for the Years

Note.—The expenditure of the lines worked

Year.	Caledonian.	Furness.	Great Eastern.	Great Northern.	Great Northern of Ireland.	Great North of Scotland.	Great Western.	Great Southern and Western of Ireland.	Lancashire and Yorkshire.
GENERAL CHARGES.									
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1884	1·20	2·60	1·32	1·39	1·31	1·28	1·21	0·84	1·43
1885	1·21	2·61	1·33	1·34	1·37	1·20	1·18	0·82	1·45
1886	1·26	2·50	1·28	1·29	1·28	1·16	1·23	0·82	1·43
1887	1·29	2·52	1·34	1·28	1·24	1·16	1·20	0·87	1·34
1888	1·33	2·60	1·28	1·33	1·23	1·16	1·16	1·33	1·36
1889	1·30	2·49	1·30	1·31	1·24	1·16	1·15	1·29	1·29
1890	1·26	2·31	1·32	1·30	1·35	1·22	1·14	1·27	1·26
1891	1·21	2·23	1·39	1·33	1·46	1·24	1·16	1·27	1·27
1892	1·18	2·32	1·53	1·34	1·51	1·25	1·19	1·24	1·24
1893	1·21	2·34	1·56	1·43	1·53	1·38	1·21	1·25	1·29
RATES, TAXES, AND GOVERNMENT DUTY.									
1884	1·65	2·49	1·93	1·81	*1·40	1·80	2·23	*2·49	2·12
1885	1·51	2·72	1·97	1·77	*1·32	1·80	2·17	*2·28	2·20
1886	1·49	2·68	1·90	1·73	*1·31	1·68	2·26	*2·09	2·26
1887	1·51	2·76	1·91	1·73	*1·32	1·56	2·23	*2·15	2·24
1888	1·49	2·58	1·92	1·70	*1·42	1·56	2·19	*2·18	2·24
1889	1·63	2·39	1·99	1·69	*1·29	1·59	2·12	*2·14	2·13
1890	1·68	2·27	2·03	1·68	*1·22	1·50	2·02	*1·97	2·03
1891	1·50	2·21	2·13	1·62	*1·21	1·57	1·90	*1·78	2·02
1892	1·47	2·42	2·20	1·67	*1·28	1·60	1·99	*1·88	2·12
1893	1·51	2·60	2·51	1·87	*1·30	1·63	2·10	*1·89	2·31
MISCELLANEOUS.									
1884	1·62	0·54	1·01	0·67	0·77	1·73	0·59	0·68	0·50
1885	1·44	0·20	0·71	0·55	0·36	1·43	0·51	0·50	0·52
1886	1·51	0·28	0·65	1·07	2·26	1·39	0·47	0·52	0·75
1887	1·55	0·17	0·45	0·64	1·79	1·31	0·44	0·44	0·51
1888	1·67	0·28	0·40	0·50	0·44	1·16	0·42	0·50	0·39
1889	1·65	0·30	0·37	0·46	5·70	1·63	0·42	0·47	0·56
1890	2·40	0·36	0·48	0·55	6·23	1·98	0·50	0·72	0·77
1891	1·46	0·48	0·49	0·55	0·83	1·74	0·55	0·67	0·69
1892	1·34	0·43	0·73	0·51	0·37	1·35	0·49	0·61	0·76
1893	1·23	0·20	0·57	0·49	0·27	1·29	0·43	0·57	0·61
TOTAL.									
1884	30·13	39·95	30·62	28·12	31·71	30·83	29·67	33·65	35·53
1885	28·10	40·51	29·62	27·59	30·31	26·54	29·10	32·57	36·74
1886	27·84	38·15	28·77	27·97	30·24	25·39	28·92	31·16	35·45
1887	27·70	39·88	28·02	27·71	29·08	24·55	29·05	31·94	34·92
1888	27·22	38·44	27·76	27·51	27·42	23·88	28·77	31·17	33·47
1889	27·61	38.32	28·17	28·37	32·95	24·36	29·36	30·91	34·33
1890	29·84	39·36	29·38	29·27	35·16	24·78	30·17	32·56	35·23
1891	28·91	40·35	30·41	30·01	29·87	24·16	30·45	31·24	36·85
1892	28·80	39·66	30·76	29·85	29·10	24·01	30·58	30·85	38·16
1893	29·64	40·68	31·54	30·63	28·82	24·42	30·65	29·91	38·54

* The railway passenger duty is not charged in Ireland.

from 1884 to 1893, of the following Railway Companies—*continued.*

by the several Companies is included.

London and North-Western.	London and South-Western.	London, Brighton, and South Coast.	Manchester, Sheffield, and Lincolnshire.	Midland.	North British.	North-Eastern.	South-Eastern.	Taff Vale.	Year.
				GENERAL CHARGES.					
d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	
1·55	1·17	1·28	1·86	1·04	1·03	1·12	2·90	2·06	1884
1·52	1·12	1·09	1·82	1·03	1·02	1·13	2·91	2·03	1885
1·54	1·22	1·13	1·72	1·00	0·98	1·14	3·07	2·04	1886
1·54	1·29	1·08	1·70	0·99	0·97	1·09	2·98	2·08	1887
1·61	1·26	1·06	1·73	0·95	0·97	1·05	3·01	2·12	1888
1·57	1·26	1·06	1·65	0·92	0·95	1·01	2·61	2·53	1889
1·54	1·32	1·06	1·66	0·93	0·96	1·02	2·46	2·17	1890
1·61	1·33	1·07	1·68	0·95	0·87	1·04	2·49	2·64	1891
1·66	1·33	1·12	1·62	0·98	1·07	1·04	2·44	2·44	1892
1·82	1·39	1·17	1·70	1·04	0·94	1·05	2·44	2·66	1893
				RATES, TAXES, AND GOVERNMENT DUTY.					
1·88	2·51	3·48	1·80	1·50	1·37	1·96	4·22	3·70	1884
1·93	2·43	3·11	1·88	1·55	1·30	2·09	4·32	3·86	1885
1·95	2·44	3·52	1·67	1·57	1·23	2·15	4·47	3·96	1886
2·05	2·54	3·27	1·70	1·63	1·19	2·08	4·05	4·21	1887
2·09	2·53	3·19	1·71	1·57	1·16	2·05	4·04	4·36	1888
2·00	2·57	3·28	1·62	1·55	1·21	1·99	4·10	4·08	1889
1·93	2·50	3·31	1·58	1·44	1·31	1·83	4·00	3·87	1890
1·84	2·36	3·29	1·57	1·26	1·22	1·81	4·12	3·77	1891
1·83	2·46	3·47	1·45	1·29	1·20	2·02	4·16	3·78	1892
2·05	2·63	3·73	1·77	1·58	1·16	2·05	4·48	4·29	1893
				MISCELLANEOUS.					
0·92	1·93	1·74	2·62	0·55	1·04	0·34	2·60	7·81	1884
0·81	1·50	1·32	2·13	0·42	0·96	0·31	1·27	6·29	1885
0·77	1·13	1·14	1·86	0·36	0·89	0·25	1·35	5·15	1886
0·84	1·05	1·23	3·57	0·38	0·85	0·22	1·35	5·12	1887
0·72	0·89	1·22	2·35	0·42	0·91	0·28	1·43	6·09	1888
0·99	0·71	1·40	2·03	0·43	0·91	0·48	1·31	5·35	1889
0·85	0·61	1·54	2·00	0·42	1·75	0·43	1·47	3·36	1890
0·76	0·90	2·09	1·77	0·46	1·58	0·30	1·63	4·18	1891
0·78	0·99	1·85	1·63	0·48	0·99	0·70	1·67	3·99	1892
0·76	0·95	1·55	1·74	0·42	0·86	0·42	1·62	4·21	1893
				TOTAL.					
32·83	35·73	31·85	32·51	28·26	26·24	33·89	35·29	53·20	1884
32·22	35·33	29·87	31·78	27·77	25·96	33·92	34·42	50·81	1885
32·63	33·84	30·11	29·61	27·61	24·60	32·79	34·57	47·61	1886
32·94	32·61	30·07	30·85	27·70	23·73	32·60	33·17	48·18	1887
33·26	31·66	29·58	29·75	27·40	23·32	32·47	33·77	50·08	1888
33·55	31·60	29·72	29·65	27·64	24·38	33·48	33·92	48·81	1889
34·73	32·08	31·13	31·01	28·93	26·30	36·09	34·64	48·22	1890
35·76	32·50	32·46	31·19	29·53	26·36	35·89	36·19	50·12	1891
35·44	32·74	32·65	30·51	29·53	26·59	36·05	35·67	45·95	1892
36·74	32·77	33·22	32·38	30·92	25·75	34·52	35·73	46·65	1893

No. 17.—Comparison of the Total Number, and of the Number per Mile of Open Railway

Years.	Locomotives.		Carriages used for the Conveyance of Passengers only.		Other Vehicles attached to Passenger Trains.	
	Total Number.	Number per Mile Open.	Total Number.	Number per Mile Open.	Total Number.	Number per Mile Open.
ENGLAND AND WALES.						
1884	12,482	·94	27,905	2·09	10,330	·77
1885	12,840	·94	28,352	2·08	10,461	·77
1886	13,006	·95	28,821	2·11	10,514	·77
1887	13,134	·95	29,524	2·14	10,407	·75
1888	13,256	·95	29,966	2·14	10,876	·78
1889	13,447	·96	30,512	2·17	11,057	·79
1890	13,731	·97	31,374	2·22	11,337	·80
1891	*14,314	1·01	33,253	2·35	11,795	·83
1892	*14,840	1·04	34,052	2·39	12,127	·85
1893	*15,372	1·06	34,793	2·41	12,590	·87
SCOTLAND.						
1884	1,713	·57	3,677	1·23	1,341	·45
1885	1,718	·58	3,773	1·26	1,388	·47
1886	1,739	·58	3,852	1·27	1,393	·46
1887	1,752	·57	3,914	1·27	1,509	·49
1888	1,763	·57	3,976	1·28	1,544	·50
1889	1,791	·57	4,077	1·31	1,554	·50
1890	1,814	·57	4,136	1·31	1,561	·49
1891	1,841	·58	4,244	1·34	1,608	·51
1892	1,880	·59	4,349	1·36	1,629	·51
1893	1,926	·60	4,546	1·41	2,084	·65
IRELAND.						
1884	632	·25	1,449	·57	843	·33
1885	638	·25	1,533	·59	712	·28
1886	655	·25	1,543	·59	766	·29
1887	666	·25	1,583	·59	751	·28
1888	675	·25	1,606	·59	764	·28
1889	686	·25	1,548	·55	890	·32
1890	692	·25	1,558	·56	915	·33
1891	705	·25	1,625	·57	941	·33
1892	719	·25	1,678	·58	985	·34
1803	734	·25	1,719	·58	1,031	·34
UNITED KINGDOM.						
1884	14,827	·79	33,031	1·75	12,514	·66
1885	15,196	·79	33,658	1·76	12,561	·66
1886	15,400	·80	34,216	1·77	12,673	·66
1887	15,552	·79	35,021	1·79	12,667	·65
1888	15,694	·79	35,548	1·79	13,184	·67
1889	15,924	·80	36,137	1·81	13,501	·68
1890	16,237	·81	37,068	1·85	13,813	·69
1891	*16,860	·84	39,122	1·94	14,344	·71
1892	*17,439	·86	40,079	1·97	14,741	·73
1893	*18,032	·87	41,058	1·99	15,705	·76

Note.—The numbers in the above table refer only to the carriages, waggons, &c. belonging to or hired by the railway companies.
* Including electric locomotives.

of LOCOMOTIVES, CARRIAGES, and other VEHICLES in each of the Years from 1884 to 1893.

Waggons of all Kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.		Any other Carriages or Waggons used on the Railway not included in the preceding Columns.		Total of Vehicles, excluding Locomotives.		Year.
Total Number.	Number per Mile Open.	Total Number.	Number per Mile Open.	Total Number.	Number per Mile Open.	
ENGLAND AND WALES.						
349,850	26·23	10,621	·80	398,706	29·89	1884
357,909	26·29	10,709	·79	407,431	29·93	1885
362,134	26·47	11,074	·81	412,543	30·16	1886
366,908	26·54	11,437	·83	418,276	30·26	1887
373,593	26·72	11,772	·84	426,207	30·48	1888
385,079	27·44	12,725	·91	439,373	31·31	1889
402,942	28·54	12,512	·89	458,165	32·45	1890
421,828	29·80	12,196	·86	479,072	33·84	1891
439,109	30·83	10,913	·77	496,201	34·84	1892
447,977	31·02	10,996	·76	506,356	35·06	1893
SCOTLAND.						
91,865	30·63	1,162	·39	98,045	32·69	1884
92,793	31·12	1,162	·39	99,116	33·24	1885
92,845	30·72	1,177	·39	99,267	32·85	1886
93,724	30·44	1,178	·38	100,325	32·58	1887
98,529	31·82	1,190	·38	105,239	33·98	1888
103,917	33·33	1,230	·39	110,778	35·53	1889
108,810	34·41	1,230	·39	115,737	36·60	1890
115,847	36·52	1,263	·40	122,962	38·77	1891
120,580	37·82	1,261	·40	127,819	40·09	1892
121,225	37·71	1,283	·40	129,138	40·17	1893
IRELAND.						
13,230	5·24	453	·18	15,975	6·33	1884
13,451	5·22	302	·12	15,998	6·21	1885
13,558	5·15	413	·16	16,280	6·19	1886
13,696	5·12	294	·11	16,324	6·10	1887
13,966	5·11	317	·11	16,653	6·09	1888
14,264	5·11	380	·14	17,082	6·12	1889
14,663	5·25	421	·15	17,557	6·29	1890
15,439	5·39	447	·16	18,452	6·45	1891
15,747	5·44	437	·15	18,847	6·51	1892
15,955	5·34	456	·15	19,161	6·41	1893
UNITED KINGDOM.						
454,945	24·12	12,236	·65	512,726	27·18	1884
464,153	24·21	12,173	·63	522,545	27·26	1885
468,537	24·24	12,664	·66	528,090	27·32	1886
474,328	24·23	12,909	·66	534,925	27·32	1887
486,088	24·54	13,279	·67	548,099	27·67	1888
503,260	25·23	14,335	·72	567,233	28·44	1889
526,415	26·22	14,163	·71	591,459	29·47	1890
553,114	27·39	13,906	·69	620,486	30·73	1891
575,436	28·31	12,611	·62	642,867	31·63	1892
585,157	28·34	12,735	·62	654,655	31·71	1893

NOTE.—The numbers in the above table refer only to the carriages, waggons, &c. belonging to or hired by the railway companies.

No. 18.—Expenditure of the under-mentioned Railway Companies in the years 1889 to 1893 Carriages and Waggons,

(Compiled from the printed Half-yearly

Year.	Caledonian.	Great Eastern.	Great Northern.	Great Western.	Lancashire and Yorkshire.	London and North-Western.	London and South-Western.	London, Brighton, and South Coast.
	£	£	£	£	£	£	£	£
1889	90,054	133,105	101,674	239,483	75,105	314,605	123,929	62,374
1890	99,976	144,549	105,794	253,149	80,708	335,339	130,477	66,069
1891	100,047	145,105	107,590	254,898	80,899	333,781	132,059	65,551
1892	105,885	147,024	111,005	281,518	80,660	339,941	133,021	65,755
1893	110,693	143,512	107,899	282,796	81,001	341,355	123,110	65,324
1889	129,414	183,365	206,786	377,550	209,652	506,780	143,691	98,992
1890	141,174	194,144	225,406	413,403	229,826	564,241	151,881	103,393
1891	156,711	204,121	239,064	445,509	242,393	584,011	157,831	104,942
1892	157,965	212,773	245,276	463,670	246,009	589,603	164.913	105,814
1893	157,778	208,115	236,683	463,881	246,267	567,167	170,249	106,898
1889	51,179	102,614	85,636	224,371	100,457	196,085	59,977	54,174
1890	54,718	113,742	91,965	228,812	96,282	198,162	58,893	56,269
1891	53,072	119,184	99,066	239,356	107,123	192,410	63,364	54,079
1892	50,904	126,142	101,105	247,306	105,463	193,488	66,988	53,608
1893	48,859	123,903	97,598	254,213	106,782	184,335	67,911	54,076
1889	55,919	77,957	78,012	174,816	85,119	137,647	65,576	33,059
1890	56,421	81,647	82,948	173,963	79,709	142,537	68,730	35,150
1891	55,729	87,625	80,839	175,153	81,351	150,038	69,685	37,260
1892	56.147	91,627	81,799	188,322	83,735	157,333	69,294	40,901
1893	53,911	85,698	83,185	196,839	81,781	149,171	67,638	44,699
1889	343,079	496,531	507,543	881,946	674,506	1,508,727	424,545	230,572
1890	368,799	525,454	529,479	931,597	704,342	1,593,571	439,967	243,678
1891	393,376	549,203	561,259	968,136	742,176	1,697,932	451,784	249,445
1892	400,864	569,600	568,255	1,009,554	755,043	1,721,059	462,479	252,686
1893	404,000	573,720	571,831	1,008,242	746,617	1,706,407	475,801	258,317

* Including "salaries and

B.—FOR

Materials for Maintenance and

	£	£	£	£	£	£	£	£
1889	51,402	76,502	64,241	181,847	35,023	174,024	74,919	44,835
1890	45,222	92,009	67,723	224,811	41,286	194,761	87,402	41,897
1891	60,961	106,392	74,539	211,633	54,758	204,756	79,772	49,971
1892	61,830	114,066	74,154	185,138	51,424	188,819	81,684	48,706
1893	59,564	103,118	64,933	193,563	42,470	185,886	72,544	50,406
1889	93,401	171,123	171,029	263,745	139,100	325,007	148,831	115,747
1890	146,360	198,419	211,756	348,904	202,156	468,166	186,619	143,718
1891	161,188	214,003	240,753	405,523	221,161	546,770	201,791	156,623
1892	144,899	213,073	229,514	381,916	210,059	502,911	185,658	150,111
1893	142,505	244,248	241,625	332,620	244,452	466,789	157,118	129,584
1889	53,411	58,457	80,213	148,076	69,831	218,214	43,885	31,209
1890	58,123	66,075	70,001	155,051	68,264	204,159	43,846	33,566
1891	62,634	74,060	77,039	167,267	65,563	209,496	41,760	34,070
1892	59,766	75,723	82,129	179,972	67,856	213,448	51,687	35,792
1893	59,452	70,024	58,565	181,343	63,055	217,554	53,705	36,711
1889	121,226	78,751	104,996	187,607	53,116	276,077	62,396	32,869
1880	131,528	90,800	111,009	206,779	62,278	275,975	66,220	39,057
1891	130,640	94,063	109,055	223,445	64,723	292,831	71,426	43,467
1892	130,165	92,572	104,656	217.318	65,346	289,959	73,730	51,786
1893	126.596	77,369	99,452	205,333	64,752	277,128	76,331	64,066

on WAGES and MATERIALS in the PERMANENT WAY, LOCOMOTIVE, REPAIR and RENEWAL of and TRAFFIC DEPARTMENTS.

Accounts of the Companies named.)

London, Chatham, and Dover.	Manchester, Sheffield, and Lincolnshire.	Midland.	North British.	North-Eastern.	South-Eastern.	Taff Vale.	Total.	Year.
WAGES.								
RENEWAL OF PERMANENT WAY.								
£	£	£	£	£	£	£	£	
33,732	37,647	191,499	106,104	193,674	54,962	18,764	1,776,711	1889
33,714	38,352	200,562	116,485	201,995	54,008	17,999	1,879,176	1890
33,844	40,740	221,406	114,314	206,966	56,202	17,696	1,911,098	1891
32,911	42,124	224,020	122,491	205,433	56,805	15,703	1,964,296	1892
33,011	45,424	223,666	125,806	212,984	57,031	15,456	1,970,462	1893
LOCOMOTIVE ENGINES.								
46,138	135,545	499,442	145,085	344,564	82,917	49,767	3,159,688	1889
46,857	150,686	532,960	154,250	385,615	90,193	51,950	3,435,979	1890
48,707	157,830	592,508	174,041	402,424	93,003	57,300	3,660,400	1891
52,106	171,007	618,795	176,539	389,138	96,282	54,173	3,744,063	1892
51,187	165,456	579,450	176,881	429,812	96,859	50,563	3,707,256	1893
RENEWAL OF ENGINES.								
21,900	86,706	192,145	48,571	241,381	26,004	16,557	1,507,757	1889
22,385	89,329	204,405	50,003	242,577	27,502	18,379	1,553,426	1880
23,422	94,299	216,073	51,287	252,199	28,223	18,086	1,611,243	1891
24,550	91,532	225,407	55,719	231,632	27,950	20,277	1,622,069	1892
24,337	85,898	210,948	55,619	232,179	23,239	17,826	1,593,723	1893
OF CARRIAGES AND WAGGONS.								
19,654	40,483	208,207	60,853	177,441	37,721	14,461	1,268,928	1889
19,963	42,913	213,787	65,066	179,437	38,386	11,628	1,292,285	1880
20,540	43,245	213,953	68,727	181,091	39,370	9,639	1,314,245	1891
21,409	46,788	229,382	73,523	177,040	41,493	8,325	1,367,118	1892
22,393	46,078	200,464	72,853	192,366	42,742	8,973	1,348,791	1893
DEPARTMENT.*								
144,292	277,421	1,244,592	348,742	775,502	237,133	71,532	8,166,713	1889
147,625	293,229	1,340,075	366,975	843,878	247,271	76,694	8,662,634	1880
154,164	303,439	1,449,767	384,362	896,967	259,833	85,487	9,146,330	1891
160,356	318,239	1,514,136	393,374	927,566	267,748	84,261	9,405,220	1892
162,977	324,945	1,531,070	396,788	938,467	271,349	80,730	9,481,261	1893

wages, &c." and clothing.

MATERIALS.								
RENEWAL OF PERMANENT WAY.								
£	£	£	£	£	£	£	£	
9,017	23,557	96,569	48,926	108,729	23,048	10,097	1,027,736	1889
9,829	30,908	108,010	45,772	149,607	23,135	8,386	1,170,758	1880
10,638	33,663	131,351	57,220	152,027	29,082	6,780	1,263,543	1891
11,995	38,338	144,598	63,582	125,781	28,589	8,309	1,227,013	1892
12,697	41,798	113,066	68,148	136,678	27,261	8,832	1,181,959	1893
LOCOMOTIVE ENGINES.								
55,829	102,116	290,438	99,059	215,421	86,205	40,431	2,317,482	1889
67,700	140,168	395,701	139,021	337,355	110,733	52,129	3,148,905	1880
74,464	151,852	438,678	164,302	338,654	122,433	52,322	3,490,507	1891
76,041	157,869	430,410	155,869	293,567	118,201	40,168	3,290,266	1892
68,043	176,098	449,816	134,812	281,686	100,212	29,622	3,199,280	1893
RENEWAL OF ENGINES.								
20,954	57,319	195,358	34,651	222,032	38,494	*10,443	1,282,547	1889
21,128	60,179	222,027	37,149	227,640	38,299	*9,249	1,314,756	1890
21,641	59,824	233,687	40,506	208,473	34,558	*11,199	1,346,777	1891
22,757	64,788	217,172	44,231	168,111	39,300	*15,333	1,338,065	1892
21,471	58,762	180,452	43,795	165,021	40,709	*9,604	1,260,223	1893
OF CARRIAGES AND WAGGONS.								
24,390	32,826	418,983	86,899	375,528	50,895	13,602	1,920,161	1889
26,340	31,894	412,654	93,887	451,776	53,098	12,426	2,065,721	1880
27,221	32,802	392,087	101,961	412,984	53,631	7,505	2,057,838	1891
28,466	30,399	368,156	109,194	360,751	51,914	7,055	1,981,467	1892
25,740	29,633	301,438	107,655	362,616	52,864	7,747	1,878,720	1893

* Repairs only.

RETURN

In pursuance of the Railway Returns (Continuous Brakes) Act, 1878)

BY

THE RAILWAY COMPANIES OF THE UNITED KINGDOM,

For the Six Months ending the 31st December 1893.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY EYRE AND SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

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1894.

[C.—7384.] *Price* 1*s*.

TABLE OF CONTENTS.

Page

TABLE compiled from the HALF-YEARLY RETURNS of CONTINUOUS BRAKES from June 30th, 1886, to 31st December 1893, showing the progress made in the use of Continuous Brakes, and the Total Amount of Stock not fitted with Continuous Brakes - - - - - - - 3

ABSTRACTS of Returns showing the description of Brakes in use on the Railways on 31st December 1893 in the United Kingdom, the amount of stock fitted, and the number of miles run by Trains fitted with each description of Brake, &c., &c. - - - - - 4

No. 1. RETURN for the six months ending on 31st December 1893 of the amount and description of Continuous Brake Power in use on the Passenger Trains running on Railways - - - 6

TABLE showing amount of passenger stock fitted with two or more descriptions of Continuous Brakes - - - - - - - - - - - - - 28

No. 2. RETURN for the six months ending on 31st December 1893 of all cases in which Continuous Brakes have failed to act when required to be brought into action, or have caused delay in the working of Trains on Railways - - - - - - - - 29

No. 3. RETURN for the six months ending on 31st December 1893 of the number of miles run by Passenger Trains not fitted with CONTINUOUS BRAKES on Railways - - - - - 76

APPENDIX: STATEMENT forwarded by the London, Brighton, and South Coast Railway Company of cases in which Accidents have been prevented on the London, Brighton, and South Coast Railway by the use of the Westinghouse Brake, during the six months ending 31st December 1893 - - - - - - - 81

STATEMENT forwarded by the London, Brighton, and South Coast Railway Company as to the number of times the Westinghouse Continuous Automatic Air Brake was used on the London, Brighton, and South Coast Railway on one particular day during the half year - - - - - - - - - - 81

(2) SPECIAL RULES and REGULATIONS relating to the use of Continuous Brakes - - 82

(3) Copy of CIRCULAR of the BOARD OF TRADE, dated 30th August 1877 - - - 121

(4) The RAILWAY RETURN (CONTINUOUS BRAKES) ACT, 1878 - - - - 123

Board of Trade,
May 1894.

COURTENAY BOYLE.

TABLE compiled from the HALF-YEARLY RETURNS of CONTINUOUS BRAKES from 30th June 1886, to 31st December 1893 (omitting all the December half-years except the last, and the Brakes not in use during the past half-year), showing the PROGRESS made in the USE of CONTINUOUS BRAKES, and the Total Amount of STOCK NOT FITTED with CONTINUOUS BRAKES.

NAME OF BRAKE.	Amount of Stock fitted as per Return for Six Months ended																NAME OF BRAKE.
	30 June 1886.		30 June 1887.		30th June 1888.		30th June 1889.		30 June 1890.		30 June 1891.		30 June 1892.		30th June 1893.		31st Dec. 1893.		
	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, and other Vehicles.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	
Brakes which are returned by the Companies as complying with conditions in Board of Trade circular.																			*Brakes which are returned by the Companies as complying with conditions in Board of Trade circular.*
Automatic vacuum	2,185	11,714	2,581	13,883	3,588	17,750	5,259	23,339	6,319	27,314	7,521	31,519	8,112	36,964	8,876	40,861	7,556	41,885	Automatic vacuum.
Westinghouse automatic	1,706	14,519	1,804	14,652	1,915	14,838	2,041	15,553	2,312	16,345	2,410	17,158	2,570	18,515	2,666	19,276	2,711	19,511	Westinghouse automatic.
Total	3,980	26,353	4,386	28,578	5,504	32,630	7,301	38,631	8,631	43,693	9,931	48,711	10,682	55,479	11,542	60,137	10,267	61,396	Total.
Per-centage of total stock (complying)	or 52 per cent.	or 52 per cent.	or 52 per cent.	or 54 per cent.	or 61 per cent.	or 62 per cent.	or 75 per cent.	or 72 per cent.	or 83 per cent.	or 81 per cent.	or 86 per cent.	or 86 per cent.	or 95 per cent.	or 94 per cent.	or 98 per cent.	or 98 per cent.	or 98 per cent.	or 99 per cent.	Per-centage of total stock (complying).
Brakes which appear to comply with only some of the conditions in the circular.																			*Brakes which appear to comply with only some of the conditions in the circular.*
Chain brake (including the brake in use on North London Railway)	688	2,677	764	2,076	770	1,689	778	1,523	778	1,441	807	1,165	82	323	—	14	—	14	Chain brake (including the brake in use on North London Railway).
Fay's, Newall's, and Fay and Newall's.	—	1,609	—	1,001	—	465	—	445	—	378	—	283	—	135	—	110	—	7	Fay's, Newall's, and Fay and Newall's.
Smith's vacuum	1,250	7,773	1,616	8,010	1,529	7,641	841	4,304	471	3,195	295	2,315	125	1,411	5	397	5	29	Smith's vacuum.
W. Parker Smith's automatic	—	3	—	3	—	3	—	3	—	3	—	3	—	3	—	3	—	3	W. Parker Smith's automatic.
Vacuum	657	4,548	970	5,650	560	4,925	205	3,896	100	2,733	103	1,559	93	168	90	34	70	—	Vacuum.
Total and per-centage	2,651 or 35 per cent.	16,385 or 81 per cent.	3,404 or 40 per cent.	17,090 or 32 per cent.	2,913 or 32 per cent.	15,073 or 29 per cent.	1,878 or 20 per cent.	10,521 or 20 per cent.	1,403 or 13 per cent.	8,100 or 15 per cent.	1,259 or 11 per cent.	5,693 or 10 per cent.	300 or 3 per cent.	2,040 or 3 per cent.	95 or 1 per cent.	558 or 1 per cent.	75 or 1 per cent.	53	Total and per-centage.
Total stock (complying and partly complying) fitted with continuous brakes and per-centage	6,631 or 89 per cent.	43,238 or 83 per cent.	7,790 or 92 per cent.	45,668 or 86 per cent.	8,417 or 93·7 per cent.	47,703 or 91 per cent.	9,179 or 95 per cent.	49,452 or 92 per cent.	10,034 or 96 per cent.	51,793 or 96 per cent.	11,190 or 97 per cent.	54,404 or 96 per cent.	10,982 or 98 per cent.	57,519 or 97 per cent.	11,637 or 99 per cent.	60,695 or 99 per cent.	10,342 or 99 per cent.	61,440 or 99 per cent.	Total stock (complying and partly complying) fitted with continuous brakes and per-centage.
Total amount of stock *not* fitted with continuous brakes and per-centage	849 or 11 per cent.	8,552 or 17 per cent.	682 or 8 per cent.	7,140 or 14 per cent.	567 or 6·3 per cent.	4,853 or 9 per cent.	545 or 5 per cent.	4,312 or 8 per cent.	410 or 4 per cent.	2,263 or 4 per cent.	335 or 3 per cent.	2,071 or 4 per cent.	210 or 2 per cent.	1,608 or 3 per cent.	121 or 1 per cent.	734 or 1 per cent.	86 or 1 per cent.	556 or 1 per cent.	Total amount of stock *not* fitted with continuous brakes and per-centage.

NOTE.—The above return is prepared with the object of showing the progress made for several years. The figures which are given in gross include engines fitted with apparatus for working brakes and vehicles fitted with pipes or connections. For further division, *see* pp. 4 and 5.

ABSTRACT of the RETURNS showing the description of CONTINUOUS BRAKES in use on 31st December 1893 on the Railways in the UNITED KINGDOM, and the AMOUNT of STOCK and the MILEAGE run by Trains fitted with each description of Brake, &c., &c.

Name of Brake.	Name of Railway Company.	Stock fitted.				Number of Thousands of Miles run by Trains fitted.	Proportion per cent.	
		Engines.		Carriages, &c.			Of Vehicles fitted with Brakes.	Of Mileage run by Trains fitted.
		Fitted with Brakes.	Fitted with Apparatus for working the Brakes.	Fitted with Brakes.	Fitted with Pipes, &c.			
1. *The following Brakes are returned by the Companies as complying with the conditions specified in the Circular of the Board of Trade, dated 30th August 1877.* (*For copy of Circular see page* 121.)								
Automatic Vacuum	Barry	7	—	43	—	44	100	100
	Brecon and Merthyr	9	2	49	13	89	79	99
	Cambrian	31	1	202	45	317	73	64
	Cheshire Lines	—	—	473	15	972	97	100
	Corris	2	—	5	—	5	71	83
	Festiniog	8	—	33	26	27	56	100
	Furness	48	—	299	44	363	80	100
	Golden Valley	—	1	3	—	12	75	66
	Great Northern	723	5	3,087	1,015	4,993	99*	100
	Great Western	632	—	5,797	—	10,005	100	100
	Hull, Barnsley, and W. Riding J.	38	—	226	25	181	90	100
	Lancashire and Yorkshire	875	—	3,558	—	5,164	100	100
	London and North-western	1,356	—	7,555	—	10,722	99	100
	L. and N.W. and Caledonian (West Coast Joint Stock).	—	—	406	—			
	London and South-western	573	29	3,357	18	5,198	99	100
	Manchester and Milford	5	5	9	3	24	47	52
	Manchester, Sheff., and Linc.	573	6	1,175	103	1,929	92	100
	Manchester South Junction and Altrincham.	11	—	135	—	116	100	100
	Maryport and Carlisle	14	—	66	12	99	84	100
	Mawddwy	1	—	2	—	9	50	98
	Mersey	9	9	97	3	147	97	100
	Metropolitan	70	—	363	16	1,087	96	100
	Midland	—	1,237	4,719	379	7,508	80	100
	Midland & South-western Junc.	1	7	25	16	121	61	100
	Neath and Brecon	4	—	11	—	15	100	100
	North-eastern	*6*	*45*	*223*	*562*	26	—	—
	North London	79	—	682	—	935	100	100
	North Staffordshire	62	—	288	174	686	59	100
	Pembroke and Tenby	5	—	25	—	45	100	90
	Pontypridd, Caerphilly, and Newport.	2	—	4	—	6	100	100
	Rhondda and Swansea Bay	9	—	37	1	28	97	100
	Severn and Wye and Severn Bridge.	5	1	17	15	33	53	100
	Somerset Joint Committee	—	58	186	—	311	100	100
	South-eastern	344	—	1,923	181	3,151	90	100
	Taff Vale	46	—	284	—	221	100	100
	Wirral	8	—	30	1	93	86	100
	Wrexham, Mold, & Connah's Quay	8	—	34	—	20	100	100
	Glasgow and South-western	98	—	866	—	1,130	73	62
	Highland	93	—	370	315	463	54	65
	Portpatrick and Wigtownshire Joint.	2	—	1	2	27	33	100
	Belfast and County Down	24	—	163	24	252	87	100
	Belfast and Northern Counties	62	—	263	15	487	94	96
	Cavan, Leitrim, and Roscommon Light.	8	—	128	7	49	95	100
	Clogher Valley	6	—	19	—	48	100	100
	Cork and Macroom	4	—	17	1	36	16	100
	Cork and Muskerry Light	6	—	19	6	46	24	100
	Cork, Bandon, and South Coast	11	—	47	—	108	100	96
	Cork, Blackrock, and Passage	3	—	14	2	38	78	100
	Donegal	6	—	97	—	30	51	58
	Dublin, Wicklow, and Wexford	54	—	227	8	484	96	100
	Dundalk, Newry, and Greenore	5	—	22	—	29	100	100
	Great Northern of Ireland	90	—	578	—	1,074	100	100
	Great Southern and Western	142	—	570	17	1,120	100	100
	Londonderry and Lough Swilly	6	—	22	10	19	69	34
	Midland Great Western	57	—	318	54	672	85	160
	Tralee and Dingle	4	—	10	—	29	100	100
	Waterford and Central Ireland	5	—	32	—	21	71	29
	Waterford and Limerick	31	—	116	57	286	56	81
	Waterford, Dungarvan, and Lismore.	2	—	—	—	—	—	—
	West Carbery	4	—	9	2	—	82	—
	West Clare	7	—	93	3	65	97	100
Westinghouse Automatic.	Colne Valley and Halstead	3	—	15	1	28	88	100
	East and West Junction	3	—	9	5	59	64	100
	Great Eastern	538	—	3,974	3	6,205	100	100
	Isle of Wight	8	—	45	1	66	100	100
	Isle of Wight Central	5	—	27	—	76	63	80

* Excluding fish, &c. waggons fitted with pipes.

Name of Brake.	Name of Railway Company.	Stock fitted. Engines. Fitted with Brakes.	Engines. Fitted with Apparatus for working the Brakes.	Carriages, &c. Fitted with Brakes.	Carriages, &c. Fitted with Pipes, &c.	Number of Thousands of Miles run by Trains fitted.	Proportion per cent. Of Vehicles fitted with Brakes.	Proportion per cent. Of Vehicles run by Trains fitted.
1. *The following Brakes are returned by the Companies as complying with the conditions specified in the Circular of the Board of Trade, dated 30th August 1877.* (*For copy of Circular see page 121*)—continued.								
Westinghouse Automatic—*cont.*	London, Brighton and S. Coast	383	—	2,802	18	3,858	99	100
	London, Chatham, and Dover	196	—	1,108	22	1,958	98	100
	Londonderry	4	—	21	—	20	100	100
	London, Tilbury, and Southend	36	—	305	6	472	95	100
	Metropolitan District	54	—	368	—	761	100	100
	Midland	11	—	234	518	4	5	—
	Midland, Scotch Joint Stock	—	—	85	—			
	North-eastern	610	—	3,483	—	6,348	100	100
	North Staffordshire	—	—	—	24	—	—	—
	N. Wales Narrow Gauge	3	—	8	3	—	53	—
	Rhymney	24	7	77	—	101	100	100
	West Lancashire	11	—	49	5	92	91	96
	Caledonian	354	—	2,367	42	3,718	98	100
	Glasgow and South-western	98	—	309	—	706	27	38
	Great North of Scotland	90	—	716	3	463	99	69
	North British	270	7	2,551	278	4,052	96	100
	Castlederg and Victoria Bridge	3	—	7	23	10	23	100
	Totals	8,892	1,375	57,766	3,630	90,212	93	99
2. *The following Brakes appear to comply with only some of the conditions specified in the Circular above mentioned.*								
Clark and Webb's	Bishop's Castle	—	—	4	—	—	67	—
	London, Tilbury, and Southend	—	—	8	2	—	2	—
Fay's	Lancashire and Yorkshire	—	—	5	—	—	—	—
Newall's	Lancashire and Yorkshire	—	—	2	—	—	—	—
Walter Parker Smith's Automatic.	Liskeard and Caradon	—	—	3	—	5	50	100
Smith's Vacuum	South-eastern	—	—	10	—	—	—	—
	Sligo, Leitrim, and Northern Counties.	5	—	15	4	15	79	29
Vacuum	North Staffordshire	13	57	—	—	—	—	—
Totals		18	57	47	6	20	—	—
Total Amount of Stock returned as FITTED with Continuous Brakes to 31st December 1893.		8,910 or 85 per cent.	1,432 or 14 per cent.	57,813 or 93 per cent.	3,636 or 6 per cent.	92,232 or 99 per cent		
Amount of Stock FITTED with Continuous Brakes during the six months ending 31st December 1893.		291 or 3 per cent.	46	1,407 or 2 per cent.	314			
Amount of Stock NOT FITTED with Continuous Brakes		1,518 including 1,432 engines fitted with apparatus for working the continuous brake, or 15 per cent.		4,172 including 3,636 vehicles fitted with pipes and connections only, or 7 per cent.		Thousands of miles run by trains *not* fitted. 1,102 or 1 per cent.		

NOTE.—The engines entered above as fitted with apparatus for working the continuous brake, have in most instances steam brakes which are worked in connexion with the continuous brake.

No. 1.

RETURN for the Six Months ending on the 31st day of December 1893, of the AMOUNT running on

NAME OF RAILWAY COMPANY.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	AMOUNT OF STOCK FITTED WITH			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages.	
					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.
ENGLAND AND WALES.						
BARRY -	Smith's automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	7	—	43	—
BISHOP'S CASTLE -	Webb's chain -	(1.) Yes, and applied by guard. (2.) Yes. (3.) No; only to passenger vehicles and guard's van. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	4	—
BRECON AND MERTHYR TYDFIL JUNC.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Part of the material is durable, part is not. (6.) Yes.	9	2	47	2
CAMBRIAN - -	Automatic Vacuum -	(1.) Yes. (2.) Yes, (3.) Yes. (4.) Yes. (5.) Yes. (6.) It is believed that in practice the brake is applied at all stations except terminals.	31	1	143	3
CHESHIRE LINES COMMITTEE.	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	Supplied by M. S. & L. and Midland Railway Companies.		412	15
COLNE VALLEY AND HALSTEAD.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	3 tank	—	3 compos. 6 thirds.	1 compo.
CORRIS - - -	Automatic Vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	2 tank	—	4	—
EAST AND WEST JUNCTION.	Westinghouse automatic brake.	(1.) Yes. (2.) Yes. (3.) Yes, if fitted. (4.) Yes. (5.) Yes. (6.) Yes.	3	—	9	—
FESTINIOG - -	Automatic Vacuum -	(1 to 6.) Yes - - -	8	—	28	26
FURNESS -	Automatic Vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	48	—	240	1
GARSTANG AND KNOT END.	No continuous brakes	- - - - - -	—	—	—	—
GOLDEN VALLEY -	Automatic Vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	1	3	—

NOTE.—*In Return No. 1 the amount and description of stock fitted with two or more descriptions of continuous*

No. 1.

and Description of Continuous Brake Power in use on the Passenger Trains Railways.

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.						Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.							
—	—	—	—	—	—	—	—	—
—	—	2	2	—	—	—	—	—
2	11	—	—	—	—	4	—	—
59	42	23	28	2	—	15	32	— For special rules *see* Appendix.
61	—	—	—	—	—	10	—	—
5 vans 1 horse box.	—	—	1 compo.	—	—	—	—	Usual Westinghouse rules.
1	—	—	2	1	—	—	—	Automatic Vacuum Brake Company's rules. The brake is not to be used for stopping at terminal stations except on emergency.
—	2 horse boxes 1 hound van 2 cattle trucks.	—	—	—	—	—	—	—
5	—	1 under reconstruction.	—	2	—	—	—	Vacuum Brake Company's Rules.
43 vans 16 fish trucks.	12 carriage trucks, 21 horse boxes, 10 meat vans	—	28	—	—	19	—	— For special rules *see* Appendix.
—	—	2	4	—	—	—	—	—
—	—	—	1	—	—	—	—	—

brakes or pipes and connections are printed in italics and not included in total on pp. 26 and 27. For Summary, see p. 28.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Great Eastern -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	538 engines, 247 tenders. *42 are also fitted with apparatus for applying vacuum brake.*	—	2,937 *33 of these are fitted with the vacuum brake gear complete and 44 with vacuum pipes.*	—
Great Northern -	Vacuum automatic -	(1.) The brakes are instantaneous in action and capable of being applied by driver and guards. (2.) No. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	723 engines, 574 tenders.	5 engines, 5 tenders.	2,091 G.N. 184 East Coast Joint Stock, 2 Pullman cars.	12
	Westinghouse automatic.	*As above* - - - -	—	—	*169 G. N., 184 East Coast Joint Stock. 2 Pullman cars.*	*249 G. N.*
Great Western -	Automatic vacuum (Sanders and Bolitho's).	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	632	—	4,467 (*6* are also fitted with Westinghouse brake.)	—
Hull, Barnsley, and West Riding Junction.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	38 engines, 32 tenders.	—	85	—
Isle of Wight -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	36	—
Isle of Wight Central.	Westinghouse automatic.	(1.) Westinghouse instantaneous in action, applied by guard and engineman. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	5	—	23	—
Lancashire and Yorkshire.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	203 tender, 231 tank, and 441 goods engines for ordinary and special passenger work if required.	—	2,432 and 692 duplicates.	—
	Fay's - -	(1.) Yes, and can be made capable of being applied by driver and guard. (2.) No. (3.) Yes, but they are never applied to more than 5 carriages of a train. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	2	—
	Newall's - -		—	—	—	—

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
1,037 *738 of these are also fitted with vacuum pipes.*	3	—	—	8 engines.	—	27	—	Drivers are not to rely on continuous brakes when approaching junctions or terminal stations.
306 G.N. 35 East Coast Joint Stock, 469 horse boxes, carriage trucks, and waggons.	20 horse boxes, 10 carriage trucks, 3 parcel, &c. vans, 970 fish, &c. waggons.	—	—	23 engines, 19 tenders.	—	7 G.N. passenger carriages, 25 horse boxes, carriage trucks, &c., 21 E.C.J.S., 12 do. luggage.	183 waggons	*See* Appendix.
131 luggage, &c., vans. 35 East Coast Joint Stock	*779 vehicles.*	—	—	—	—	*100 passenger carriages and 50 luggage, &c. vans. 21 E.C.J.S. passenger carriages, 12 luggage vans, &c.*	*54 passenger carriages and 20 luggage vans and 151 waggons.*	—
Note.—*The stock shown as fitted with the Westinghouse brake is included above.*								
1,330 (*10* are also fitted with Westinghouse brake and *40* with Westinghouse pipes and connections.)	—	—	—	6 552 engines altered to enable brake to be applied by guard.	—	111	—	For regulations *see* Appendix.
141	25	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—
4	—	2 In course of being fitted.	16 In course of being fitted.	3	—	11	—	Westinghouse Brake Rules.
371 and 65 duplicates.	—	—	19	20 passenger tank engines, 10 goods tender engines.	—	12 and 16 duplicates.	—	For copy of printed instructions, *see* Appendix.
3	—	—	—	—	—	—	—	Are not allowed to skid.
2	—	—	—	—	—	—	—	

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Lancashire and Yorkshire—*cont.*	Automatic vacuum and Westinghouse.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	*59* Note.— *51 carriages and 42 other vehicles fitted with complete vacuum automatic brake gear, also the Westinghouse pipe, are included in the number of vehicles fitted with the vacuum automatic brake.* 74 waggons fitted with automatic vacuum brake gear complete and 11 waggons fitted with automatic vacuum pipes only, and *1* fitted with the Automatic vacuum and Westinghouse brake gear complete.	—
Liskeard and Caradon.	WalterParkerSmith's automatic.	(1.) Yes, by guard only. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	3	—
London and North-western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	1,356 878 engines and tenders and 478 tank engines are fitted with continuous brakes which can be actuated by the guard or in case of a break-away will be applied automatically.	—	5,289 (*286 of these are also fitted with the Westing-house brake.*)	—
London and North-western and Caledonian. (West Coast.)	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	See Note A.		266 C.	—
London and South-western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	573 engines and 428 tenders.	29 engines	2,174	—
	Westinghouse -	*(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.*	*6 engines* and tenders.*	—	—	*18**

* *This stock is used for interchange traffic only, and*

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
111	—	—	—	—	—	*28*	—	—
—	—	3	3	—	—	—	—	—
2,266 (*19 of these are also fitted with the Westinghouse brake.*)	—	—	76	53	—	150	—	For special rules *see* Appendix.
140 C.	—	See Note A.		See Note A.		20	—	Same as L. & N.W.
		Note A.—There are o joint engines and tenders, the carriages being worked in the ordinary trains over each Company's line by its own engines and tenders. Note B.—This Return applies to West Coast passenger carriages and other vehicles, so far only as they run over the London and North-western Railway to or from Carlisle. The Caledonian Company will make a separate return of the same stock in respect of their railway north of Carlisle. Note C.—*All these vehicles are fitted with the Westinghouse automatic pressure brake also.*						—
1,183	18	2 engines in consequence of the failure of the regular engines.	—	10 engines and 10 tenders.	8	85	—	For instructions *see* Appendix.
—	*186**	—	—	—	—	—	—	—

is also fitted with the automatic vacuum brake.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
London, Brighton, and South Coast.	Westinghouse continuous automatic air.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	255 tank, 128 tender. (These include a number of goods engines which occasionally work passenger trains, *and 15 engines fitted with automatic vacuum.*)	—	2,148	5
London, Chatham, and Dover.	Westinghouse automatic air.	(1.) The brakes are practically instantaneous in action, and can be applied by engine-driver and guards. (2.) Yes. (3.) Yes. (4.) Yes. (5.) The materials generally are of a durable character, except the india-rubber coupling connections. (6.) Yes.	104 engines and tenders, 92 tank engines. (*8 of the engines and tenders are also fitted with apparatus for applying the automatic vacuum brake.*)	—	909 (*12 also fitted with automatic vacuum brake complete, and 5 with pipes only*).	—
Londonderry -	Westinghouse automatic.	(1.) Instantaneous in action. Can be applied by driver and guard. (2.) Self-acting. (3.) Can be applied to every vehicle of a train. (4.) In daily use. (5.) The materials are of the best kind and kept in order. (6.) Yes.	4 tank engines.	—	19	—
London, Tilbury, and Southend.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	36	—	297	—
	Clark and Webb's chain.	(1.) Applied by guard. (2.) No. (3.) Yes. (4.) No. Seldom used. (5.) Yes. (6.) Yes.	—	—	8	2
Manchester and Milford.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, on 3 trains. (4.) Yes. (5.) Yes. (6.) Yes.	5	5	6	2
Manchester, Sheffield, and Lincolnshire.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	224 and 349* goods engines.	6	1,023	1
Manchester South Junction and Altrincham.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	11	—	133	—

* Available for passenger trains

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
654	13 *and 271 vehicles fitted with vacuum pipes.*	—	—	6 tank engines Brake taken off 1 tender engine.	—	65 Brakes taken off 47 vehicles.	Pipes taken off 12 vehicles.	*See* Appendix.
199 (*21 vehicles are also fitted with automatic vacuum brake pipes*).	2 lamp carriages, 20 waggons.	—	—	—	—	—	2	*See* Appendix.
2 vans	—	—	—	—	—	—	—	Ordinary rules.
8	6	—	—	—	—	—	—	*See* Appendix.
—	—	—	—	—	—	—	—	—
3	1	—	7	2	—	1	1	—
152	102	—	—	11	—	3	—	—
2	—	—	—	—	—	—	—	The engine-driver must not depend entirely upon the action and power of the brake, but when approaching terminal stations or junctions must have his train so well under control, that it may be brought to a standstill with the hand brake without the use of the vacuum automatic brake, except in cases of emergency. Guards must be at their hand brakes when passing the distant signal for a terminal station, and by the application of their brake assist the drivers to pull up the trains wherever necessary. Guards must keep a vigilant look out for signals, &c., as usual, and be prepared to use their hand brake or the vacuum automatic brake, if necessary.

as occasion may require.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Maryport and Carlisle.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) The brake is used for every stoppage except at terminal stations.	14 engines. 14 tenders.	—	52	—
Mawddwy -	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) No.	1	—	1	—
Mersey - -	The vacuum continuous automatic brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	9 tank engines.	9 tank engines fitted with a steam brake arranged to work automatically with continuous brakes.	97	—
Metropolitan -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	70 tank engines.	—	354	—
Metropolitan District.	Westinghouse automatic brake.	(1.) Yes. Can be applied by driver and guard. (2.) Yes, in case of breakaway. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Not depended upon when entering a terminus.	54 engines	—	368	—
Midland - -	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	—	1,237 including 233 tank engines. (All have automatic steam brakes to engine and tender wheels combined with vacuum automatic brake for train.)	3,116 (including 68 goods vehicles).	378 (including 377 goods vehicles.)
	Westinghouse automatic air.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	11 (*All are fitted also with apparatus for working the vacuum automatic brake.*)	—	164	54 (including 15 goods vehicles).
	Westinghouse automatic air brake on Midland Scotch Joint Stock.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	—	—	65	—
Midland and South-Western Junction.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	1	7	25	—
Neath and Brecon	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) No. (5.) Yes. (6.) Yes.	4	—	10	—

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
10 brake vans. 4 horse boxes.	2 horse boxes. 6 carriage trucks. 4 cattle waggons.	—	—	—	—	—	4 cattle waggons.	Automatic brake not to be used for stopping at terminal stations.
1	—	1	2	1	—	2	—	—
—	2 vans 1 truck.	—	—	—	—	—	—	*See* Appendix.
6 brake vans 3 horse boxes.	14 gas-holder trucks, 2 goods waggons.	—	—	—	—	—	—	*See* Appendix.
—	—	—	—	—	—	—	—	*See* Appendix.
1,603	1	—	—	—	22 including 11 tank engines (all fitted with automatic steam brake to engine and tender wheels combined with vacuum automatic brake for train.)	13	—	*See* Appendix.
70	464	—	—	—	—	—	4	*See* Appendix.
20	—	—	—	—	—	—	—	—
—	16	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
North-Eastern -	Westinghouse automatic.	(1.) Practically instantaneous, and can be applied by either engine-driver or guards. (2.) It is self-acting. (3.) It is capable of being applied to every vehicle of a train. (4.) It is in regular use in daily working. (5.) The materials used are generally of a durable character, easily maintained, and kept in order. (6.) The brake is used for every stoppage, except when entering a platform with a buffer-stop at the end or at which another train is standing.	456 engines, 271 tenders. 154 goods engines. *See* statement below.	—	2,540	—
	Vacuum automatic brake.	*(1.) Not instantaneous, and can be applied by either engine-driver or guards. (2.) It is self-acting. (3.) It is capable of being applied to every vehicle of a train. (4.) It is in occasional use. (5.) The materials are to a considerable extent of a durable character, easily maintained and kept in order. (6.) The brake is used for every stoppage, except when entering a platform with a buffer-stop at the end or at which another train is standing.*	*6 engines, 6 tenders.*	*45 engines, 45 tenders.*	*156*	*68*
			Note.—*The stock fitted with this automatic vacuum brake is included in stock fitted with Westinghouse brake.*			

Supplementary Statement to the above No. 1 Return.—The Company have 154 goods engines which run excursion and other occasional passenger trains, and these are fitted with the Westinghouse brake gear complete; *3 of them are also fitted with the vacuum automatic apparatus for working the brake on the train only.* (These 3, and 2 with the Westinghouse, have been fitted during the above six months.)

North London -	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	64 standards 15 duplicates.	—	*Standards.* 1st class - 120; 2nd class - 132; 3rd class - 138; Composites - 50; Brake-vans - 86 = 526. *Duplicates.* 1st class - 22; 2nd class - 37; 3rd class - 55; Composites - 16; Brake-vans - 26 = 156	
North Staffordshire.	Vacuum - -	(1.) Yes. Driver only. (2.) No. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	13 tender engines, with vacuum brake on tender and steam brake on engine.	57 (31 tank engines and 26 goods tank engines) fitted with steam brakes.	—	—
	Westinghouse -	(1.) Yes. Driver only. (2.) No. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	—	10

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
943	—	—	—	7 engines, 7 tenders.	—	30 carriages, 26 other vehicles.	—	*See* Appendix.
		Note.—The carriages above referred to do not include those belonging jointly to the East Coast companies which mainly compose the express and fast trains running between London and Scotland, and which are fitted with continuous brakes.						
67	*494*	—	—	—	*9 engines, 9 tenders.*	*42 carriages, 8* other vehicles.	*21* other vehicles.	*See* Appendix.
The Company have 1,376 vehicles (which are not included in their passenger stock, but which run occasionally with passenger trains) fitted with brakes or brake connecting pipes, as below :— *15 with Westinghouse and vacuum brakes complete.* 21 with Westinghouse brake gear complete. *1,153 with Westinghouse and automatic vacuum brake connecting pipes.* 187 with Westinghouse brake connecting pipes. 1,376 Total.								
—	—	—	—	—	—	3rd class 6 Bke. vans 2	—	*See* Appendix.
—	—	—	—	—	—	—	—	*See* Appendix.
—	14	—	—	—	—	—	—	—

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
North Staffordshire—*cont.*	Automatic vacuum -	(1.) Yes; applied by driver and guard. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	62 engines and tenders with steam brake on engine and automatic brake on tender.	—	208	67
North Wales Narrow Gauge.	Westinghouse automatic continuous brake is in process of being fitted to the rolling stock.	(1.) Yes. (2.) Yes. (3.) All vehicles are not yet fitted. (4.) Not yet in regular use. (5.) Yes. (6.) Yes. When in use.	3 tank engines	—	8	3
Pembroke and Tenby.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	5 engines, 3 tenders.	1 tender	19	—
Pontypridd, Caerphilly, and Newport.	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	2	—	4	—
Ravenglass and Eskdale.	No continuous brakes.	—	—	—	—	—
Rhondda and Swansea Bay.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	9 tank	—	36	—
Rhymney - -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	18 tank engines, 4 tender engines. Also 2 tender engines. Brake applied to tender wheels. Steam brake on engine wheels.	7	59	—
Severn and Wye and Severn Bridge.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, except in the case of mixed trains. (4.) Yes. (5.) Yes. (6.) Yes.	5	1	16	2

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
80	107	—	—	1 goods tender engine with steam-brake on engine, and automatic vacuum-brake on tender.	2 tank-engines fitted also with steam-brake.	15 converted from simple vacuum and pipes only to automatic complete.	43	—
—	—	—	4	—	—	—	—	—
6	—	—	—	2 engines, 1 tender.	—	7	—	—
—	—	—	—	—	—	—	—	—
—	—	2	4	—	—	—	—	—
1 horse-box	1 low-sided carriagetruck.	—	—	—	—	—	—	—
8 partly brake vans and partly 3rd class. 8 brake vans. 1 carriage truck, 1 horse-box.	—	—	—	1 tank engine	—	—	Guards and drivers are at all times to satisfy themselves that the brake is in proper order, and to make use of the continuous brake on every occasion for regulating the stoppage of trains. On approaching terminal stations the continuous brake must only be used in cases of emergency, the driver taking care to reduce the speed of his train so that it can be brought to a stand by the hand brake of the engine or tender alone.	
1	13	—	—	—	—	—	—	The ordinary regulations as to application of the vacuum brake.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Somerset and Dorset Joint Committee.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	—	58 (including 16 tank engines, all fitted with automatic steam brakes to engine and tender wheels combined with automatic vacuum brake for train.)	130 (*5 have connecting pipes for Westinghouse brake.*)	—
South-Eastern -	Automatic vacuum -	(1.) Instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Self-acting. (3.) Yes. (4.) Yes. (5.) Some durable, others not very durable. (6.) Not used at terminal stations.	344 engines, 244 tenders. (*6 engines are also fitted with Westinghouse pumps and pipes.*)	—	1,547	5 (*besides 7 vehicles also fitted with simple vacuum brake.*)
	Smith's vacuum -	(1.) Nearly instantaneous in action, and capable of being applied by engine-driver only. (2.) Not self-acting. (3.) Yes. (4.) Yes. (5.) Some durable, others not very durable. (6.) Not used at terminal stations.	—	—	8	*3 excluding 733 vehicles also fitted with automatic brake.*
Southwold - -	No continuous brakes	——	—	—	—	—
Taff Vale - -	Vacuum automatic -	(1.) Yes (2.) Yes. (3.) Yes. (4.) Yes (5.) Yes. (6.) Yes.	46 engines, 6 tenders.	—	217	—
Talyllyn - -	No continuous brakes.	——	—	—	—	—
West Lancashire -	Westinghouse automatic continuous.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	11 engines 7 tenders.	—	42	1
West Somerset Mineral.	No continuous brakes.	——	—	—	—	—
Wirral - -	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	20	—
Wrexham, Mold, and Connah's Quay.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	33	—
		Total for England and Wales -	7,460	1,425	35,989	590

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
56	—	—	—	—	—	4	—	*See* Appendix.
376	176 (*besides 2 vehicles also fitted with simple vacuum brake.*)	—	17 (exclusive of 181 fitted with through pipes for connecting the automatic brake). *152 of the 181 are also fitted with through pipes for simple vacuum brake and included in the quantity shown below.*	19 engines, 18 tenders.	2 tender engines fitted with Westinghouse pumps.	196	—	—
2	*150* (*besides 73 vehicles fitted with automatic brake.*)	—	—	—	—	—	—	—
—	—	3	26	—	—	—	—	—
67	—	—	—	4 engines	—	—	—	20 inches of vacuum is maintained and for station stops this is worked down to 13 inches, the balance being available for emergencies.
—	—	2	5	—	—	—	—	The brake is used for every stoppage.
7	4	2	—	—	—	—	—	—
—	—	1	3	—	—	—	—	—
10	1	—	4	—	—	—	—	—
1	—	—	—	—	—	—	—	The usual rules for working automatic vacuum brake.
11,858	2,173	46	176	192	34	914	269	

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
SCOTLAND.						
Caledonian - -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) *See* rules.	282 tender and 72 tank engines.	—	1,580	—
	Vacuum and Westinghouse combined.	*(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes.* (6.) *See rules.*	—	*9 engines and tenders fitted to work automatic vacuum.*	*87*	—
Glasgow and South-western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) No restriction regarding use of brakes except when stopping at terminal stations.	76 and 22 tank	—	549 (*25 of these are also fitted to work the Westinghouse automatic brake*).	—
	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) No restriction regarding use of brakes except when stopping at terminal stations.	94 and 4 tank	(*Of the foregoing 90 engines and tenders and 4 tank engines are fitted to work automatic vacuum braked trains.*)	271	—
Great North of Scotland.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, terminal stations excepted.	74 and 16 tank	—	385	—
Highland -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	93	—	239	—
	Westinghouse -	*(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.*	—	*1**	*26**	*14**
North British -	Westinghouse automatic air.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	270 (178 engines have air brake fitted to wheels of engines and tender, 81 tank-engines to wheels of engine, and 11 engines to wheels of tender only).	7	2,034	3
Portpatrick and Wigtownshire Joint Committee.	*The stock working on these railways is provided by the Caledonian and Glasgow and South-Western except* - - - - - -		2	—	1	—
		Total for Scotland - -	1,005	7	5,059	3

* These are fitted with

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
787 brake-vans, horse-boxes, &c.	42 brake vans, horse-boxes, &c.	—	—	12 tank	—	25 carriages, 20 brake-vans, &c.	—	*See* Appendix.
500	*15*	—	—	—	—	*7 carriages, 20 brake-vans, &c.*	—	Do.
317 (*Of these 12 brake vans, 17 horse boxes, and 17 carriage trucks, and 1 corpse van are also fitted with the Westinghouse automatic brake.*)	—	—	—	10 (6 of which are tank-engines).	—	63	—	*See* Appendix.
38	—	—	—	—	—	—	—	—
331	3	—	—	11, and 9 tank-engines.	—	106	—	*See* Appendix.
131	315	5	—	7	—	58	—	—
*11**	*308* (*7 with vacuum brake complete and 301 with piping*).	—	—	—	—	—	*80*	—
517	275	—	—	24	12	83	32	*See* Appendix.
Railway Companies, is all fitted with continuous brakes, and included in the return to the Board of Trade supplied by those Companies								
—	2	—	—	1	—	—	—	—
2,121	637	5	—	74	12	355	32	

vacuum-brake complete.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
IRELAND.						
Ballycastle -	No continuous brakes.	——	--	—	—	—
Belfast and County Down.	Vacuum automatic -	(1.) to (5.) Yes. (6.) Yes, except at terminal stations.	24 engines. 14 tenders.	—	141	—
Belfast and Northern Counties.	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except at terminals.	45 engines and 17 goods engines for ordinary and special passenger work if required.	—	210	2
Bessbrook and Newry.	Continuous brakes not adaptable to electric cars.	——	—	—	—	—
Castlederg and Victoria Bridge.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes, when exclusively passenger. (4.) Yes. (5.) Yes. (6.) Yes.	3	—	5	—
Cavan, Leitrim, and Roscommon Light.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	12	—
Clogher Valley -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	6	—	13	—
Cork and Macroom Direct.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, to all passenger carriages and brake vans. (4.) Yes. (5.) Yes. (6.) Yes, except terminals.	4 tank engines	—	17	1
Cork and Muskerry Light.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, to all carriages used for the conveyance of passengers. (4.) Yes. (5.) Yes. (6.) Yes, except terminals.	6	—	19	—
Cork, Bandon, and South Coast.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) On some trains. (4.) Yes. (5.) Yes. (6.) Yes, except for terminals.	11 tank	—	31	—
Cork, Blackrock, and Passage.	Automatic vacuum -	(1.) Action of brakes almost instantaneous, and capable of being applied by engine driver or guard. (2.) Self-acting. (3.) Applied to every vehicle in train. (4.) In regular use in daily working. (5.) Materials good, easily kept in order. (6.) Used every stoppage, except terminals.	3	—	12	2
Donegal, Section I., Strabane to Stranorlar.	——	——	Engine power supplied by Great Northern Railway Company (Ireland), whose engines are fitted with automatic brakes.		—	—
Donegal, Section II., Stranorlar to Killybegs.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	6	—	17	—

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
—	—	3	11	—	—	—	—	—
1 carriage truck, 9 brake-vans, 8 horse-boxes, and 4 waggons.	24 waggons	—	—	—	—	12 carriages, 5 horse-boxes, 4 waggons.	5 waggons	As issued by the Vacuum Brake Company, Limited
53	13	—	—	—	—	13 altered from pipes to brakes.	—	*See* Appendix.
—	—	2 electro-motive passenger cars.	1 car and 1 van, 27 goods waggons.	—	—	—	—	—
2 vans	23 goods and cattle waggons.	—	—	—	—	—	—	—
110 waggons, 6 brake-vans.	3 ballast, 2 timber trucks, 2 horse-boxes.	—	—	—	—	—	—	*See* Appendix.
6 brake vans	—	—	—	—	—	—	—	—
—	—	—	1 carriage, 1 van, 83 waggons.	1	—	1 van, 3 carriages.	—	Vacuum brake is not to be used for ordinary stoppages on mixed trains of more than six waggons, but it is, however, to be coupled up, and a vacuum maintained to be used in case of emergency.
—	6 vans	—	54 goods and cattle waggons.	—	—	—	—	Ordinary rules of Automatic Vacuum Brake Co.
10 vans, 4 horse-boxes, 2 carriage trucks.	—	2 tank	—	—	—	1 horse-box, 2 carriage trucks.	—	*See* Appendix.
2	—	—	2	3	—	14	2	*See* Appendix.
—	—	—	5 carriages and 29 waggons.	—	—	—	—	—
2 horse-boxes, 3 carriage trucks, 5 cattle waggons, 70 goods waggons.	—	3	11 carriages and 48 waggons.	—	—	—	—	—

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages.	
					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.
Dublin, Wicklow, and Wexford.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	31 tank and 21 tender engines.	—	173 carriages and 28 vans.	8 carriages
Dundalk, Newry, and Greenore.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	5	—	12	—
Great Northern -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	90	—	398	—
Great Southern and Western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except terminals.	92 50 goods engines.	—	322	—
Londonderry and Lough Swilly.	Automatic vacuum	(1.) Instantaneous. (2.) Yes. (3.) Yes. (4.) Generally. (5.) Yes. (6.) Yes.	6	—	18	—
Midland Great Western of Ireland.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, except to those fitted with pipes only. (4.) Yes. (5.) Yes. (6.) Yes, except at junctions and terminals, when hand-brakes only are used.	57	—	172	—
Sligo, Leitrim, and Northern Counties.	Smith's vacuum -	(1.) Yes, fairly so; applied by drivers only. (2.) No. (3.) Yes, if all are coupled. (4.) Yes. (5.) Yes. (6.) Yes.	5	—	15	—
Tralee and Dingle Light.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes.	4	—	10	—
Waterford and Central Ireland.	Automatic vacuum -	(1.) Yes. (2.) Yes, when vehicles become disconnected. (3.) Yes. (4.) On one train. (5.) Yes. (6.) Yes.	5	—	20	—
Waterford and Limerick.	Automatic vacuum -	*See* copy Rules - - -	31	—	63	—
Waterford and Tramore.	No continuous brakes.	——	—	—	—	—
Waterford, Dungarvan, and Lismore.	Automatic vacuum -	——	2 engines and tenders.	—	—	—
West Carbery -	Automatic vacuum -	(1.) Instantaneous. Driver only. (2.) Yes. (3.) Every passenger car and vans. (4.) Yes. (5.) Yes, but require periodical renewals. (6.) Yes.	4	—	5	—
West Clare -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except at terminals.	7 tank.	—	18	—
		Total for Ireland - -	445	—	1,731	13
		* Total for the United Kingdom	8,910	1,432	42,779	606

* Note.—These totals are the numbers of engines and carriages returned by the railway companies as fitted with continuous brakes. It will be observed, however, that some of the brakes so returned but very imperfectly fulfil that designation.

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used on Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
15 horse-boxes, 5 carriage trucks, and 6 perishable goods vans.	—	—	—	2 tank engines	—	1 van, 4 horse-boxes, and 3 carriage trucks.	—	—
10	—	—	—	—	—	—	—	Same as L. & N.W.
180	—	—	—	—	—	8	—	—
248	17	—	—	11	—	27	—	*See* Appendix.
4	10	—	—	—	—	—	—	—
57 brake-vans, 60 horseboxes, 25 cattleboxes, 4 P.O. vans.	30 fish vans, 24 carriage trucks.	—	—	—	—	4 cattle boxes, 1 brake-van.	—	*See* Appendix.
—	1 horse-box, 3 fish vans.	—	—	—	—	—	3 fish-vans	—
—	—	—	—	—	—	—	—	—
12	—	4	13	2	—	—	—	*See* Appendix.
20 vans, 8 horse-boxes, 25 perishable traffic vans.	49 waggons, 7 horse-boxes, 1 carriage truck.	12	34	6 Includes 4 new engines.	—	15 carriages, 2 vans, 10 perishable traffic vans. Includes 6 new carriages.	—	*See* Appendix.
—	—	4	15 carriages and 2 composite brake-vans and 1 guard's van.	—	—	—	—	—
—	—	4 tender, 1 tank.	18 carriages and 3 vans.	—	—	—	—	—
4	2	—	—	—	—	—	—	—
75	3	—	—	—	—	2 new passenger brake-vans.	3	—
1,055	220	35	360	25	—	138	13	
15,034	3,030	86	612	291	46	1,407	314	

EXTRACT from the FOREGOING RETURN showing the NUMBER of ENGINES, PASSENGER and other VEHICLES used for PASSENGER TRAINS which were fitted with TWO or MORE descriptions of CONTINUOUS BRAKES to provide for running Through Trains, and for interchange of Traffic.

NAME OF RAILWAY COMPANY.	Name of Brakes fitted to the Stock enumerated in Columns 4 to 7.		AMOUNT OF STOCK FITTED WITH BRAKES IN DUPLICATE.			
			Engines fitted complete.	Engines fitted with Apparatus for working the Brake.	Vehicles fitted complete.	Vehicles fitted with Pipes and Connections only.
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
GREAT EASTERN - -	Westinghouse automatic	Vacuum - -	—	42	33	782
GREAT NORTHERN - -	Automatic vacuum -	Westinghouse - -	—	—	521	1,028
GREAT WESTERN - -	Automatic vacuum -	Westinghouse - -	—	—	16	40
LANCASHIRE AND YORKSHIRE	Automatic vacuum -	Westinghouse - -	—	—	171	93
LONDON AND NORTH-WESTERN.	Automatic vacuum -	Westinghouse - -	—	—	305	—
WEST COAST JOINT STOCK -	Automatic vacuum -	Westinghouse - -	—	—	406	—
LONDON AND SOUTH-WESTERN.	Automatic vacuum -	Westinghouse - -	6	—	—	204
LONDON, BRIGHTON, AND SOUTH COAST.	Westinghouse - -	Automatic vacuum -	15	—	—	271
LONDON, CHATHAM, AND DOVER.	Westinghouse - -	Automatic vacuum -	—	8	12	26
MIDLAND - - -	Westinghouse -	Automatic vacuum -	—	11	—	—
NORTH-EASTERN - -	Westinghouse automatic	Automatic vacuum -	6 —	45 3	223 15	577 —
	Westinghouse (pipes and connections only).	Automatic vacuum -	—	—	—	1,153
SOMERSET AND DORSET -	Automatic vacuum -	Westinghouse - -	—	—	—	5
SOUTH-EASTERN - -	Automatic vacuum -	Smith's vacuum -	—	—	—	806
	Automatic vacuum (pipes and connections only).	Smith's vacuum -	—	—	9	152
	Automatic vacuum -	Westinghouse - -	—	6	—	—
CALEDONIAN - - -	Westinghouse automatic	Vacuum - - -	—	9	587	15
GLASGOW AND SOUTH-WESTERN.	Westinghouse automatic	Automatic vacuum -	—	94	72	—
HIGHLAND - -	Automatic vacuum -	Westinghouse -	—	1	37	14
	Westinghouse (pipes and connections only).	- - -	—	—	7	301
		TOTAL - -	27	219	2,414	5,467

No. 2.

RETURN for Six Months ending on the 31st day of December 1893, of all CASES in which CONTINUOUS BRAKES have failed to act when required to be brought into Action, or have caused delay in the working of trains on Railways.

No. 2.

RETURN for Six Months ending on the 31st day of December 1893, of all CASES in which CONTINUOUS BRAKES have failed to act when required to be brought into Action, or have caused delay in the working of trains on Railways.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay in any of the instances asked for in Column 4.	3. Date of Failure.	4. Instances under the three following heads separately, of :— 1. Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. 2. Failure or partial failure to act under ordinary circumstances to stop a train when required. 3. Delay in the working of trains in consequence of defects in, or improper action of, the Brakes, distinguishing whether they arose from neglect or inexperience of servants, or failure of machinery or material.	5. Number of Miles run by Trains fitted with each description of Continuous Brake.
ENGLAND AND WALES.				
Barry - -	—	No failures reported.	—	Automatic Vacuum Brake. 43,902 miles.
Brecon and Merthyr -	—	No failures reported.	—	Vacuum Automatic Brake. 89,291 miles.
	—	No failures reported.	—	Fay's Hand Brake. 1,117 miles.
Cambrian - -	—	No failures reported.	—	Automatic Vacuum Brake. 317,513 miles.
Cheshire Lines Committee.	The Vacuum Automatic. (Engines supplied by Manchester, Sheffield, and Lincolnshire and Midland Railway Companies. *See* Return No.1.)		1. and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	Automatic Vacuum Brake. 971,876 miles.
		Aug. 19	1.50 p.m. Liverpool to Godley. On journey and at Warrington. Brake difficult to release. Hose-pipe between engine and tender No. 59 collapsed from ordinary wear and tear.	
		Sept. 21	12.20 p.m. Chester to Manchester. Late start. Changing engines. Ejector of Engine No. 314 failed to act properly. Dirt in cones. Neglect of staff.	
		Nov. 11	3.45 p.m. Southport to Manchester. At Woodville. Brake difficult to release. Temporary stoppage in steam-pipe. Cause not known. Engine No. 49.	
		„ 29	3.0 p.m. Northwich to Manchester. At Peel Causeway. Ejector of engine No. 319 failed. Supposed from some foreign substance getting into cones.	
		Dec. 13	6.30 a.m. Irlam to Manchester. Late start. Ejector steam-way temporarily blocked. Cause not definitely traceable. Engine No. 167.	
Colne Valley and Halstead.	—	No failures reported.	—	Westinghouse Automatic Brake. 27,892 miles.
Corris - -	—	No failures reported.	—	Vacuum Automatic. 5,733 miles.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
East and West Junction,	—	No failures reported.	—	Westinghouse Automatic Brake. 59,779 miles.
Festiniog - - -	—	No failures reported.	—	Automatic Vacuum. 27,790 miles.
Furness - -	—	No failures reported.	—	Automatic Vacuum. 363,725 miles.
Golden Valley - -	—	No failures reported.	—	Automatic Vacuum. 12,478 miles.
Great Eastern - -	Westinghouse Brake. (538 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	6,205,229 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 1	Flexible pipe burst on S.C.C. No. 384, at Bishopsgate.	
		„ 1	Flexible pipe burst on T.C.C. No. 971, at Forest Gate.	
		„ 4	Flexible pipe burst on T.C.C. No. 942, at Eaton Crossing.	
		„ 4	Flexible pipe burst on brake-van No. 32, near Stratford.	
		„ 5	Flexible pipe burst on T.C.C. No. 1,163, near Whittlesford.	
		„ 5	Flexible pipe burst on brake-van No. 58, at Beccles.	
		„ 6	Collar broke off pipe from pump to main reservoir on engine No. 722, near Attleboro'.	
		„ 7	Collar broke off pipe from pump to main reservoir on engine No. 765, near Ely.	
		„ 12	Flexible pipe burst on T.C.C. No. 1,172, at Cambridge.	
		„ 14	Flexible pipe burst on T.C.C. No. 754, at Bethnal Green.	
		„ 17	Flexible pipe burst on horse-box No. 356, near Harlow.	
		„ 18	Collar broke off pipe from pump to main reservoir on engine No. 462, near Dersingham.	
		„ 19	Leakage from branch-pipe on T.C.C. No. 92, at Harold Wood.	
		„ 20	Flexible pipe burst on composite carriage No. 392, near Harold Wood.	
		„ 20	Brake applied on carriage truck No. 32, driver not regulating air pressure properly when approaching Forest Gate.	
		„ 22	Collar broke off pipe from main reservoir to driver's valve on engine No. 417, at Kelvedon.	
		„ 24	Collar broke off pipe from main reservoir to driver's valve on engine No. 704, at Ipswich.	
		„ 24	Flexible pipe burst on T.C.C. No. 516, near Green Lanes.	
		„ 24	Union nut slacked back on pipe from pump to main reservoir on engine No. 736, at Manningtree.	
		„ 25	Flexible pipe burst on brake-van No. 135, near Hockley.	
		„ 25	Flexible pipe burst on brake-van No. 29, at Bethnal Green.	
		„ 28	Flexible pipe burst on brake-van No. 116, near Park.	

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Great Eastern—*cont.* -	Westinghouse Brake—*cont.*	July 29	Collar broke off pipe from pump to main reservoir on engine No. 463, near Blankney.	
		„ 29	Flexible pipe burst on T.C.C. No. 1,177, at Swaffham.	
		„ 31	Collar broke off pipe from pump to main reservoir on engine No. 713, near Roundham Junction.	
		Aug. 3	Triple valve joint leaking on horse-box No. 122, at Park.	
		„ 4	Flexible pipe burst on T.C.C. No. 844, near Needham.	
		„ 5	Flexible pipe burst on T.C.C. No. 1,004, at Witham.	
		„ 5	Flexible pipe burst on horse-box No. 231, at North Hall Box.	
		„ 5	Collar broke off main pipe at three-way piece on engine No. 768, at Westerfield.	
		„ 8	Flexible pipe burst on tender No. 777, near Postland.	
		„ 8	Flexible pipe burst on F.C.C. No. 1,009, near Brentwood.	
		„ 8	Collar broke off pipe from pump to main reservoir on engine No. 736, near Witham.	
		„ 9	Union nut slacked back on main reservoir on engine No. 345, at Rectory Road.	
		„ 10	Collar broke off pipe from main reservoir to driver's valve on engine No. 784, near Ingatestone.	
		„ 10	Flexible pipe burst on horse-box No. 194, at Stratford.	
		„ 10	Collar broke off pipe from main reservoir to driver's valve on engine No. 420, near Brentwood.	
		„ 14	Flexible pipe burst on brake-van No. 523, at Ely.	
		„ 15	Collar broke off pipe from pump to main reservoir on engine No. 565, at Wormley.	
		„ 15	Flexible pipe burst on F.C.C. No. 221, near Ilford.	
		„ 16	Flexible pipe burst on brake-van No. 74, near Yarmouth.	
		„ 16	Flexible pipe burst on carriage truck No. 7, at Globe Road.	
		„ 17	Flexible pipe burst on composite carriage No. 473, near Bentley.	
		„ 19	Flexible pipe burst on T.C.C. No. 1,181, near Flordon.	
		„ 19	Flexible pipe burst on T.C.C. No. 847, at Bishopsgate.	
		„ 19	Collar broke off pipe from pump to main reservoir on engine No. 469, near Wyvenhoe.	
		„ 21	Collar broke off pipe from pump to main reservoir on engine No. 757, near Newport.	
		„ 22	Flexible pipe burst on brake-van No. 277, at Silvertown.	
		„ 24	Flexible pipe burst on T.C.C. No. 1,184, at Belton.	
		„ 25	Flexible pipe burst on T.C.C. No. 390, at March.	
		„ 25	Collar broke off pipe from pump to main reservoir on engine No. 1,017, at Chesterford.	
		„ 26	Flexible pipe burst on composite carriage No. 304, near Kentish Town.	
		„ 26	Flexible pipe burst on brake-van No. 113, at Colchester.	
		„ 28	Flexible pipe burst on composite carriage No. 428, near Bishopsgate.	

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Great Eastern—*cont.*	Westinghouse Brake—*cont.*	Aug. 28	Collar broke off pipe from pump to main reservoir on engine No. 642, near Bury.	
		„ 31	Flexible pipe burst on F.C.C. No. 3, at Stamford Hill.	
		„ 31	Flexible pipe burst on T.C.C. No. 42, near Sawbridgeworth.	
		„ 31	Flexible pipe burst on composite carriage No. 200 near Wymondham.	
		Sept. 1	Collar broke off pipe from pump to main reservoir on engine No. 1017, at Brantham Siding.	
		„ 2	Flexible pipe burst on composite carriage No. 371, near Ely.	
		„ 6	Collar broke off pipe from main reservoir to driver's valve on engine No. 761, near Ardleigh.	
		„ 11	Flexible pipe burst on T.C.C. No. 1186, near Stretham Fen.	
		„ 12	Flexible pipe burst on T.C.C. No. 809, near Melton.	
		„ 13	Collar broke off pipe from pump to main reservoir on engine No. 713, at Harling Road.	
		„ 13	Defective packing washer in flexible pipe on brake-van No. 71, at Ipswich.	
		„ 13	Flexible pipe burst on composite carriage No. 220, near Kelvedon.	
		„ 14	Flexible pipe burst on T.C.C. No. 693, at Liverpool Street.	
		„ 14	Flexible pipe burst on brake-van No. 247, at Tidal Basin.	
		„ 15	Union nut slacked back on pipe from pump to main reservoir on engine No. 733, near Wickham Market.	
		„ 15	Flexible pipe burst on horse-box No. 71, near Postland.	
		„ 20	Flexible pipe burst on composite carriage No. 437, at Cambridge.	
		„ 21	Flexible pipe burst on T.C.C. No. 139, near Billericay.	
		„ 23	Handle broke off main stop-cock on carriage truck No. 86, at Norwich.	
		„ 25	Flexible pipe burst on composite carriage No. 49, at Cambridge.	
		„ 27	Collar broke off pipe from pump to main reservoir on engine No. 677, near Woodford.	
		„ 27	Flexible pipe burst on brake-van No. 164, at March.	
		„ 28	Collar broke off pipe from pump to main reservoir on engine No. 713, near Whittlesford.	
		„ 29	Collar broke off pipe from pump to main reservoir on engine No. 1014, near Shenfield.	
		Oct. 4	Flexible pipe burst on S.C.C. No. 243, at Broxbourne.	
		„ 6	Flexible pipe burst on saloon No. 7, at Waltham Cross.	
		„ 6	Flexible pipe burst on T.C.C. No. 1187, near Romford.	
		„ 8	Union nut slacked back on main reservoir on engine No. 781, at Harlow.	
		„ 13	Collar broke off pipe from pump to main reservoir on engine No. 455, near Manningtree.	
		„ 24	Flexible pipe burst on T.C.C. No. 1178, near Clapton.	
		„ 28	Collar broke off pipe from driver's valve to main pipe on engine No. 766, at Colchester.	
		Nov. 4	Flexible pipe burst on T.C.C. No. 366, at Beccles.	

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Great Eastern—*cont.*	Westinghouse Brake—*cont.*	Nov. 16	Collar broke off pipe from pump to main reservoir on engine No. 1,019, near Bentley.	
		„ 17	Flexible pipe burst on T.C.C. No. 685, near Tivetshall.	
		„ 19	Flexible pipe burst on T.C.C. No. 54, at Bethnal Green.	
		„ 22	Flexible pipe burst on S.C.C. No. 161, near Enfield Lock.	
		„ 22	Flexible pipe burst on carriage truck No. 118, at Chelmsford.	
		„ 30	Collar broke off pipe from main reservoir to driver's valve on engine No. 421, near Takeley.	
		Dec. 3	Collar broke off pipe from pump to main reservoir on engine No. 719, near Claydon.	
		„ 9	Collar broke off branch-pipe from main to triple valve on F.C.C. No. 96, at Cambridge.	
		„ 11	Defective packing washer in flexible pipe on brake-van No. 611, at Ely.	
		„ 13	Collar broke off pipe from main reservoir to driver's valve on engine No. 421, at Harold Wood.	
		„ 19	Flexible pipe burst on T.C.C. No. 300, near Marks Tey.	
	Vacuum	No failures reported.	——	23,404 miles.
			Brake Failures on "Foreign Stock" working over the G.E.R. Co.'s System.	
	Westinghouse Brake.	July 7	Flexible pipe burst on Midland Railway horse-box No. 354, near Kennett.	
		Aug. 30	Flexible pipe burst on London, Brighton, and South-Coast Railway carriage truck No. 48, at Bishops Stortford.	
		„ 31	Flexible pipe burst on Great Northern Railway horse-box No. 1358, at Cowbit.	
		Sept. 15	Flexible pipe burst on Midland Railway composite carriage No. 575, at Cantley.	
		„ 20	Flexible pipe burst on Midland Railway fruit-van No. 205, near Black Bank.	
		„ 28	Flexible pipe burst on Great Northern Railway milk-van No. 2249, near Salhouse.	
		Dec. 18	Flexible pipe burst on Great Northern Railway horse-box No. 1235, at Ely.	
Great Northern	The Vacuum Automatic. (728 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	4,993,222 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 4	Five minutes delay between Bardney and Kingthorpe to down train No. 7, owing to piston rod dropping out of piston head of composite carriage No. 298. Thread defective.	
		„ 4	Twenty-seven minutes delay at King's Cross to special down train No. 91, owing to piece of waste in iron pipe of third-class carriage No. 1593.	
		„ 6	Ten minutes delay at West Hallam to down train No. 32, owing to piston spindle working out of composite carriage No. 1847.	
		„ 13	Six minutes delay between West Hallam and Kimberley to up train No. 197, owing to valve in brake compartment No. 593, being out of position. Caused by a blow.	

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Great Northern—*cont.*	The Vacuum Automatic—*cont.*	July 17	Three minutes delay at Oakleigh Park to down train No. 173, owing to stocking in cylinder of carriage No. 2186 being defective.	
		,, 25	Sixteen minutes delay at Retford to up train No. 124, owing to damaged pipe near cylinder of van No. 1020. Obstruction on line.	
		,, 28	Fourteen minutes delay at Hougham to down train No. 115, owing to bracket of engine No. 664 being loose, allowing drip-valve casting to come in contact with tender wheel breaking it.	
		Aug. 12	Eight minutes delay at Corby to up train No. 391, owing to ejector on engine No. 3 being obstructed.	
		,, 17	Three minutes delay at Bromshall Junction to down train No. 103, owing to connecting pipe of milk-van No. 1968 having a hole in it.	
		,, 19	Five minutes delay at Hatfield to up train No. 273, owing to connecting pipe of horse-box No. 1253 being defective, admitting air.	
		,, 24	Two minutes delay at Grantham to up train No. 355, owing to connecting pipes of engine No. 236 and North-Eastern carriage truck No. 88 sticking.	
		Sept. 3	Twenty minutes delay at York to up train No. 118, owing to india-rubber neck-rings of third class carriage No. 2443 and van No. 1018 having been worn large through wear and tear.	
		,, 4	Six minutes delay between Grantham and Peterborough to up train No. 322, owing to piece of waste in pipe of engine No. 95.	
		,, 13	Fifteen minutes delay at Wood Walton to up train No. 483, owing to cock being turned in slip brake No. 2656.	
		,, 17	Nine minutes delay at Bottesford to train No. 11/18/4/2/1, owing to a hole in the pipe of third-class saloon carriage No. 1372.	
		,, 18	Ten minutes delay at Tallington to down train No. 285, owing to india-rubber rolling ring of North-Eastern Railway saloon carriage No. 1692 being displaced.	
		,, 21	Eleven minutes delay between Hallaton and Medbourne to train No. 25/30, owing to piston rod of parcels van No. 1036 bending.	
		,, 26	Nine minutes delay at Grantham to down train No. 14, owing to sack on engine No. 41 bursting from wear and tear.	
		Oct. 2	Two minutes delay at Hatfield to up train No. 218, owing to ejector valve of engine No. 562 being out of order.	
		,, 2	Five minutes delay at Peterborough to down train No. 690, owing to india-rubber washer of application valve of van No. 1018 being worn out.	
		,, 5	Five minutes delay at Hitchin to down train No. 286, owing to india-rubber bush of cylinder of van No. 971 being slack.	
		,, 11	Two minutes delay at Doncaster to up train No. 548, owing to connecting pipe of slip brake van being damaged.	

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Great Northern—*cont.*	The Vacuum Automatic—*cont.*	Oct. 12	Three minutes delay at Humberstone to up train No. 59/55, owing to connecting pipe of cattle truck No. 10,326 leaking.	
		„ 23	Six minutes delay at York to up train No. 666, owing to half-inch pipe of East Coast Railway third-class carriage No. 208 being broken.	
		Nov. 4	Eleven minutes delay between Peterborough and Peakirk to down loop train No. 44, owing to foreign substance in combination ejector of engine No. 668 and cattle truck No. 10,087.	
		„ 14	Twelve minutes delay at Peterborough to up train No. 46, owing to india-rubber packing of piston of fruit van No. 680 being too slack.	
		„ 20	Three minutes delay at Tingley to train No. 104/3, owing to drip valve of engine No. 514 having stuck.	
		„ 20	Nine minutes delay at High Barnet to up train No. 108, owing to leak at release valve of second-class carriage No. 2019.	
		„ 21	Nine minutes delay at Heckington to down train No. 30, owing to the main pipe of engine No. 109 failing at the flange.	
		„ 22	Nine minutes delay at Claypole to up train No. 475, owing to connecting pipes of composite carriage No. 2311 leaking.	
		Dec. 2	Twenty-six minutes delay between Stevenage and Southgate to up train No. 666, owing to an obstruction in the train pipe believed to be waste.	
		„ 2	Ten minutes delay at Westgate to train No. 79/2, owing to drip-valve bottom of engine No. 290 being lost.	
		„ 3	Three minutes delay at Nottingham to down train No. 53, owing to connecting pipe of tender No. 525 being frozen on stud.	
		„ 8	Eighteen minutes delay at Peterborough to up train No. 282, owing to piston rod washer of third-class carriage No. 749 being defective and release valve blocked with dirt.	
		„ 9	Two minutes delay at Laister Dyke to up train No. 483, owing to defective gland washer of composite carriage No. 338.	
		„ 11	Four minutes delay at Bradford to train No. 41/6, owing to piston stocking of third-class carriage No. 2329, being defective.	
		„ 12	Nine minutes delay at Tempsford to down train No. 186, owing to flexible pipe connecting cylinder to main of mail van No. 181 being defective.	
		„ 14	Nine minutes delay at Peterborough to up train No. 282, owing to the release valve of horse-box No. 1159 being blocked with dirt.	
		„ 26	Five minutes delay at King's Cross to down train No. 381, owing to piece of paper causing leakage in valve of N.S. van No. 187.	
		„ 30	Three minutes delay at Hitchin to up special train No. 100, owing to drip valve of engine No. 89 being frozen.	

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Great Western - -	Automatic Vacuum Brake (Sanders & Bolitho's) (632 engines fitted. *See* Return No.1.)		1. Nil.	10,005,567 miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		July 8	Train overran platform length of three coaches at Bedminster, owing to continuous pipe being partially blocked with piece of cotton waste. (Waste supposed to have been put in by lamp cleaner accidentally.)	
		Oct. 28	Three minutes delay at Ealing. Train overran platform length of five coaches, piece of cotton waste found in pipe below ejector check valve of engine No. 3235.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 1	Seven minutes delay at Durston, owing to top cylinder cover of milk van No. 962 breaking.	
		,, 2	Seven minutes delay at Reading, owing to release valve of compo. No. 404 sticking up.	
		,, 3	Eight minutes delay at Birmingham, owing to brake blocks binding on wheels of London and South Western Company's van No. 365. Cause could not be ascertained.	
		,, 6	Five minutes delay at Steventon, owing to bridge pipe of pump of engine No. 3006 breaking.	
		,, 7	Nine minutes delay running between Slough and Southall, owing to air pipe of engine No. 618 being defective.	
		,, 8	Ten minutes delay at Trowbridge, owing to ejector check valve not closing properly of engine No. 621, owing to a piece of cotton waste getting under it.	
		,, 10	Seven minutes delay at Bath, owing to pump of engine No. 3028 being defective.	
		,, 11	Three minutes delay running between Worcester and Evesham, owing to flexible hose pipe of horse-box No. 578 being defective.	
		,, 15	Ten minutes delay at Carmarthen Junction, owing to ejector check valve of engine No. 2208 not closing properly, owing to a piece of cotton waste getting under it.	
		,, 20	Nine minutes delay at Redruth, owing to ejector valve of engine No. 1589 sticking up.	
		,, 22	Five minutes delay at Trowbridge, owing to bottom cylinder cover of third-class carriage No. 1846 leaking	
		,, 29	Four minutes delay running between Totnes and Kingsbridge Road, owing to brake blocks binding on wheels. Temporary defect, cause of which could not be ascertained.	
		,, 29	Fifteen minutes delay running between Exeter and Taunton, owing to release valve of second-class carriage No. 303 sticking up.	
		Aug. 1	Five minutes delay at Carmarthen Junction, owing to cylinder cover of third-class carriage No. 1008 cracking.	

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Great Western—*cont.*	Automatic Vacuum Brake (Sanders and Bolitho's) —*cont.*	Aug.	4	Six minutes delay at Westbourne Park, owing to release valve rods of carriage truck No. 377 bending, preventing valve from closing.	
		,,	4	Five minutes delay at Bristol, owing to automatic valve of engine No. 579 failing, and brake could not be released. Failure of material.	
		,,	4	Seven minutes delay running between Newton Abbot and Plymouth, owing to air pipe of engine No. 2217 being defective.	
		,,	7	Six minutes delay at Swindon, owing to branch pipe leading from pump of engine No. 2312 splitting.	
		,,	10	Five minutes delay running between Bristol and Exeter, owing to air pipe of engine No. 583 being defective.	
		,,	15	Three minutes delay at Bristol, owing to flexible hose pipe of third-class carriage No. 1025 breaking.	
		,,	15	Five minutes delay at Pill, owing to piece of cotton waste being in air pipe of engine No. 460.	
		,,	19	Five minutes delay running between Paddington and Reading, owing to valve seat joint of pump of engine No. 3513 blowing out.	
		,,	20	Three minutes delay at Gloucester, owing to union nuts of branch copper pipes of carriage trucks No. 206 and 227 working loose.	
		,,	21	Four minutes delay at Leamington, owing to gland of third-class carriage No. 390 being defective. Delay inserting blank washer.	
		,,	21	Seven minutes delay running between Filton and Ashley Hill, owing to branch pipe leading to cylinder of fish waggon No. 42,565 breaking.	
		,,	25	Five minutes delay at Westbury, brake of engine No. 3217 could not be released. Piece of cotton waste under ejector check valve.	
		,,	26	Five minutes delay at Didcot, owing to flexible hose pipe of news van No. 858 being defective.	
		,,	30	Six minutes delay at Limpley Stoke, owing to india-rubber gland of carriage truck No. 381 jamming on piston rod, cast-iron gland having been screwed down unevenly.	
		Sept.	2	Five minutes delay running between Fawley and Holm Lacy, owing to union nut of branch pipe of horse box No. 66 working off.	
		,,	4	Twenty-nine minutes delay running between Swindon and Bristol, owing to flexible hose pipe of engine No. 3223 breaking.	
		,,	6	Ten minutes delay running between Reading and Paddington, owing to union nut of branch pipe of carriage truck No. 316 working loose.	
		,,	12	Ten minutes delay at Kemble, owing to flexible hose pipe of carriage truck No. 353 breaking.	
		,,	15	Four minutes delay at Reading, owing to bridge pipe of pump of engine No. 163 breaking.	
		,,	16	Three minutes delay at Taplow, owing to cylinder sticking up of passenger van No. 1059, one of the pull rod joints having become jammed.	

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Great Western—*cont.*	Automatic Vacuum Brake (Sanders and Bolitho's) —*cont.*	Sept. 25	Thirteen minutes delay running between Littleton and Badsey, owing to union nut of branch pipe of third-class carriage No. 1993 working loose.	
		,, 28	Ten minutes delay at Didcot, owing to flexible hose pipe breaking of milk truck No. 530. Delay putting on new pipe.	
		,, 30	Four minutes delay at Bourton-on-the-Water, owing to cylinder top cover of horse box No. 218 breaking.	
		Oct. 2	Five minutes delay running between Cheltenham and Notgrove, owing to flexible hose pipe of third-class carriage No. 1143 being defective.	
		,, 2	Five minutes delay at Acton, owing to cylinder of passenger van (No. not known) jamming on piston rod. Caused by piston travelling beyond its usual stroke owing to brake blocks being badly worn.	
		,, 3	Eight minutes delay running between Paddington and Reading, owing to union nut of branch pipe of carriage truck No. 56 working loose.	
		,, 12	Ten minutes delay at Frome, owing to ejector check valve of engine No. 485 not closing properly, probably something getting under it.	
		,, 15	Five minutes delay at Challow, owing to union nut of branch pipe of carriage truck No. 90 working loose.	
		,, 16	Six minutes delay at Over Junction, owing to ejector check valve of engine No. 826 breaking.	
		,, 23	Four minutes delay at St. Erth, owing to piston gland of fish waggon No. 42,533 being defective.	
		Nov. 3	Nine minutes delay running between Bristol and Exeter, owing to back and top joints of pump of engine No. 583 blowing out.	
		,, 4	Seven minutes delay at Reading, brake of first-class carriage No. 66 could not be released, owing to gland being screwed down too tightly. Delay putting coach off.	
		,, 9	Fifteen minutes delay at Bridport East St. owing to steam brake of engine No. 1310 not releasing.	
		,, 13	Three minutes delay running between Portskewett and Chepstow, owing to air pipe leading to pump of engine No. 1159 breaking. Pipe broken by being struck by side rod.	
		,, 15	Seven minutes delay at Westbourne Park, owing to piece of cotton waste getting under ejector check valve of engine No. 2212.	
		,, 15	Four minutes delay at Portland Junction, owing to cylinder cover of fruit van No. 47,900 being defective.	
		,, 18	Two minutes delay at Baker Street, steam brake of engine No. 1401 could not be released, owing to automatic valve not closing.	
		,, 18	Fourteen minutes delay at Yeovil, owing to cylinder of passenger brake-van No. 196 not releasing itself, piston rod having jammed on the gland, which was saturated with oil. Delay putting off van.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Great Western—*cont.*	Automatic Vacuum Brake (Sanders and Bolitho's). —*cont.*	Nov. 28	Seven minutes delay running between Victoria and Southall, owing to piece of cotton waste getting under ejector check valve of engine No. 617.	
		„ 29	Twelve minutes delay running between Gloucester and Swindon, owing to bridge pipe of pump of engine No. 3206 breaking.	
		Dec. 5	Seven minutes delay at Slough, owing to brake setter of slip compo. No. 2082 sticking up.	
		„ 4	Three minutes delay at Kidlinton and eighteen at Heyford, owing to cylinder of first-class and second-class compo. No. 979 jamming on piston rod. Delay at Heyford putting coach off.	
		„ 6	Seven minutes delay running between Slough and Taplow, owing to air pipe leading to pump of engine No. 1117 breaking.	
		„ 12	Three minutes delay at Baker Street, owing to steam brake of engine No. 1409 not releasing. Cause unknown.	
		„ 15	Ten minutes delay at Pensford, owing to bottom stud of pump gland of engine No. 522 breaking.	
		„ 19	Three minutes delay at Gower Street owing to ejector check valve of engine No. 982 sticking up. Cause not known.	
		„ 8	Four minutes delay at Subway Junction, Paddington, owing to brake of engine No. 3024 going on and stopping train. Cause could not be ascertained. Probably something got under valve of pump.	
		„ 21	Four minutes delay at Teignmouth, owing to piece of cotton waste getting under ejector check valve of engine No. 3025.	
		„ 27	Twelve minutes delay at Lydney, owing to automatic steam brake valve of engine No. 2400 not closing, nuts at top and bottom of piston rod being rather tight.	
		„ 28	Five minutes delay at Taunton, owing to gudgeon pin of cross head of pump of engine No. 487 breaking.	
Hull, Barnsley, and West Riding Junction Railway and Dock Company.	Automatic Vacuum Brake. (38 engines fitted. *See* Return No. 1.)	Jan. 25	1. and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	181,218 miles.
		Dec. 7	Driver unable to maintain vacuum owing to a defect in the ball valve of No. 39 engine vacuum brake, causing a delay of 8 minutes to No. 72 down passenger train between Howden and Hull.	
Isle of Wight - -	- - -	No failures reported.	—	Westinghouse Automatic Brake. 66,252 miles.
Isle of Wight Central -	—	No failures reported.	—	Westinghouse Brake. 76,430 miles.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Lancashire and Yorkshire.	Automatic Vacuum Brake (875 engines fitted. *See* Return No.1)		1 and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	5,164,774 miles.
		July 1	The 4.40 a.m. special train from Methley Junction to Blackpool was delayed 55 minutes at Wakefield by the hose pipe on engine No. 1081 being defective.	
		,, 15	The 7.10 p.m. Holcombe Brook to Victoria train was delayed 12 minutes at Radcliffe by the nuts working loose on regulating valve of vacuum pump on engine No. 987.	
		,, 15	The 12.15 p.m. train, Rochdale to Middleton Junction, lost 2 minutes in running owing to the clapper valve washer being defective on engine No. 218.	
		,, 22	The 10.5 a.m. train, Leeds to Blackpool (Central), was delayed 5 minutes at Bamber Bridge by the main vacuum pipe breaking on engine No. 1006.	
		,, 26	The 12.30 p.m. train, Fleetwood to Bradford, lost 7 minutes in running owing to the vacuum piston sticking on engine No. 865. Rolling ring twisted.	
		Aug. 14	The 8.30 p.m. train, Leeds to Victoria, was delayed 2 minutes at Littleboro' by the main vacuum pipe breaking on engine No. 987.	
		Sept. 5	The 8.25 p.m. train, Victoria to Bradford, lost 2 minutes in running owing to the vacuum piston bush leaking on engine No. 903.	
		,, 5	The 4.58 p.m. train, Victoria to Rochdale, was delayed 1 minute at Werneth by the main vacuum pipe on engine No. 251 being defective.	
		,, 8	The 7.23 p.m. train, Liverpool to Ormskirk, was delayed 4 minutes at Town Green by the large ejector spindle of engine No. 660 breaking.	
		,, 20	The 2.0 p.m. train, Bolton to Southport, was delayed 3 minutes at Blowick by the main vacuum pipe breaking on engine No. 415.	
		,, 23	The 11.20 a.m. train, Sowerby Bridge to Blackpool, was delayed 5 minutes at Preston by the vacuum piston sticking on engine No. 890. Rolling ring twisted.	
		,, 25	The 8.25 p.m. train, Victoria to Bradford, lost 9 minutes in running by the vacuum piston sticking on engine No. 1007. Rolling ring twisted.	
		,, 30	The 4.25 p.m. train, Blackburn to Colne, was delayed 10 minutes at Padiham owing to the trailing vacuum hose pipe being defective on engine No. 1133.	
		Oct. 14	The 8.27 a.m. train, Southport to Wigan, lost 3 minutes in running owing to the combination ejector being defective on engine No. 1039.	
		,, 19	The 12.50 p.m. train, Rochdale to Bradford, was delayed 21 minutes at Smithy Bridge by the vacuum piston sticking on engine No. 889. Rolling ring twisted.	
		,, 26	The 9.25 p.m. train, Victoria to Leeds, lost 2 minutes in running owing to the tender vacuum piston sticking on engine No. 1007. Rolling ring defective.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c., under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Lancashire and Yorkshire—*cont.*	Automatic Vacuum Brake —*cont.*	Oct. 30	The 11.50 a.m. train, Bolton to Liverpool, was delayed 5 minutes at Kirkby by the small vacuum pipe breaking on engine No. 733.	
		,, 30	The 3.5 p.m. train, Holmfirth to Bradford, was delayed 7 minutes at Thongs Bridge by the diaphragm being defective on engine No. 56.	
		Nov. 5	The 5.20 p.m. Victoria to Bacup lost 12 minutes in running owing to the combination ejector being defective on engine No. 1050.	
		,, 11	The 6.15 a.m. Wigan to Chorley was delayed 8 minutes at Adlington by the vacuum piston sticking on engine No. 333. Rolling ring twisted.	
		,, 30	The 2.25 p.m. Liverpool to Preston was delayed 2 minutes at Bursco' Junction by the main vacuum pipe being defective on engine No. 820.	
		Dec. 1	The 4.7 p.m. Liverpool to Rochdale was delayed 24 minutes at Bolton by the vacuum piston sticking on engine No. 681, owing to frost.	
		.. 2	The 7.31 p.m. Low Moor to Victoria was delayed 3 minutes at Lightcliffe by the vacuum piston sticking on engine No. 988, owing to frost.	
		,, 2	The 10.15 p.m. Victoria to Royton was delayed 3 minutes at Newtown by the vacuum piston sticking on engine No. 223, owing to frost.	
		.. 2	The 8.53 a.m. Victoria to Wigan was delayed 9 minutes at Pendlebury by the tender vacuum piston sticking on engine No. 999. Rolling ring twisted.	
		.. 2	The 7.45 a.m. Southport to Victoria was delayed 12 minutes at Walkden by the vacuum piston sticking on engine No. 897, owing to frost.	
		,, 2	The 3.50 a.m. Leeds to Victoria was delayed 5 minutes at Sowerby Bridge by the tender vacuum piston sticking on engine No. 219, owing to frost.	
		,, 10	The 7.20 a.m. Colne to Victoria was delayed 5 minutes at Molyneux Brow by the vacuum diaphragm spindle stripping on engine No. 697.	
		,, 11	The 5.37 p.m. Victoria to Low Moor was delayed 9 minutes at Miles Platting by the plug working out of vacuum pipe on engine No. 1107.	
		,, 23	The 12.0 noon train, Accrington to Blackpool (Central), was delayed at Pleasington by piston sticking on carriage No. 1667. The piston had been bent by a violent blow whilst running.	
Liskeard and Caradon	—	No failures reported.	—	Walter Parker Smith's Automatic Brake. 4,820 miles.
London and North-Western.	Automatic Vacuum Brake. (1,356 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	10,677,749 miles passenger trains. 45,408 miles mixed trains.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 14	The 11.55 p.m. train from Holyhead to London lost time in running from Chester to Crewe, the engine being unable to maintain the necessary vacuum. Due to the vacuum pump on the engine being in a dirty state, probably caused by dust.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
London and North-Western—*cont.*	Automatic Vacuum Brake —*cont.*	July 15	The 5.30 p.m. train from London to Crewe lost time in running from Rugby to Stafford, owing to the engine having a difficulty in maintaining the necessary vacuum, consequent on the vacuum pump being nearly blocked up with dirt. Neglect of engine-fitter.	
		„ 23	The 8.50 p.m. train from Manchester to Diggle lost time in running to Staley Bridge, owing to the engine being unable to maintain the vacuum. Due to the bottom nut on the vacuum pipe on the foot-plate of engine having "slacked back."	
		Aug. 17	The 4.0 p.m. train from Preston to Wigan lost time in running owing to the engine having created more vacuum than could be maintained. Due to the gauge on the engine being defective, thus misleading the driver. Failure of material.	
		„ 18	The 3.0 p.m. train from Holyhead to Chester was stopped near Abergele, owing to the engine being unable to maintain the vacuum. Due to the left-hand feed-bag on engine becoming uncoupled, and breaking the vacuum pipe. Failure of material.	
		Sept. 9	The 10.0 p.m. train from London to Carlisle was delayed at Weedon, owing to the engine being unable to maintain the vacuum. Due to the gudgeon of the crosshead from which the air pump of the engine is worked breaking off. Failure of material.	
		„ 21	The 8.5 p.m. train from Holyhead to Crewe was delayed at Gaerwen and Bangor, owing to the engine being unable to release the brakes. Due to the back clack of the engine ejector having got broken, and under the other clack. Failure of material.	
		„ 22	The 11.5 a.m. excursion train from London to Liverpool was delayed at Bletchley, Northampton, and Clifton, near Rugby, owing to a difficulty in creating the necessary vacuum. Due to the equilibrium valve on the engine being out of adjustment.	
		„ 23	The 6.45 a.m. train from Llandovery to Swansea lost time in running from Llangadock to Pontardulais, owing to the engine being unable to maintain the necessary vacuum. Due to a small piece of lead having got into the port leading to the torpedo on the engine.	
		Oct. 2	The 2.0 p.m. train from London to Carlisle was delayed at Penrith, owing to a difficulty in releasing the brakes. Due to some temporary disarrangement of the ejector of the engine.	
		„ 5	The 1.40 p.m. train from Leeds to Liverpool was delayed at Manchester owing to the engine being unable to create the vacuum. Due to a hole in the pipe in the boiler of the engine. Failure of material.	
		„ 12	The 2.0 p.m. train from London to Carlisle was delayed at Cheddington owing to a difficulty in maintaining the vacuum. Due to a temporary slight obstruction between the piston rod and packing ring on carriage No. 512, which caused a slight leakage. Failure of material.	

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London and North-Western—*cont.*	Automatic Vacuum Brake —*cont.*	Oct. 24	The 12.50 p.m. train from Manchester to Crewe lost time in running from Wilmslow to Goostrey. Engine was unable to maintain the necessary vacuum, owing to some cotton waste having got into the pipes between the engine and Great Western Railway van No. 47,819.	
		,, 25	The 12.40 p.m. train from Shrewsbury to Stafford came to a stand shortly after leaving Shrewsbury station, owing to the vacuum not being maintained. Due to the vacuum pipe under the boiler of the engine having broken. Failure of material.	
		,, 28	The 11.45 a.m. train from Manchester to Crewe was delayed at Stockport, owing to the engine being unable to maintain the necessary vacuum. Due to a vacuum pipe on Great Western Railway truck No. 995 bursting. Failure of material.	
		,, 31	The 5.27 p.m. train from Kirkburton to Huddersfield was stopped at signals approaching the latter place, after which the brakes could not be released. Due to the equilibrium valve on engine being out of adjustment.	
		Nov. 1	The 11.41 p.m. train from Carlisle to London was delayed at Shap Summit, owing to the engine being unable to release the brakes consequent on a portion of sponge cloth having got under the clacks of the ejector.	
		,, 1	The 10.45 p.m. train from Patricroft to Manchester was delayed at Eccles, owing to the engine being unable to release the brakes, consequent on some red lead from a joint on the large ejector having got into the torpedo.	
		,, 7	The 11.30 a.m. train from Leeds to Manchester was delayed at Mirfield, owing to the engine being unable to maintain the necessary vacuum. Due to the screw which fastens the flange on the vacuum pipe of the engine having broken. Failure of material.	
		,, 10	The 2.0 p.m. train from London to Carlisle was delayed at Preston, owing to the engine having a difficulty in creating the vacuum. Due to the drip valve on the right hand side of fire box of engine having fallen out. Failure of material.	
		,, 14	The 8.45 a.m. train from Manchester to Stockport lost time in running from Reddish, owing to the engine being unable to maintain the necessary vacuum. Due to an accumulation of dirt under the torpedo valve of engine.	
		,, 15	The 8.18 a.m. train from Watford to London lost time in running to Harrow, owing to the engine being unable to maintain the necessary vacuum. Due to a hose pipe on carriage No. 160 having given way. Failure of material.	
		,, 18	The 9.25 p.m. train from Buxton to Manchester was delayed in starting from Buxton, and also lost time at Dove Holes, owing to the brake blocks having frozen on to the wheels of three of the vehicles.	

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London and North-Western—*cont.*	Automatic Vacuum Brake —*cont.*	Dec. 5	The 1.10 p.m. train from Birmingham to Sutton Coldfield was delayed at Vauxhall, owing to the engine being unable to create the necessary vacuum. Due to some packing having got into the ejector of engine.	
		„ 13	The 9.30 a.m. train from Hull to Liverpool was delayed at Marsh Lane station (N.E.R.), owing to the engine being unable to release the brakes after they had been applied. Due to torpedo valve of engine having been cut, and the cone damaged. Failure of material.	
		„ 16	The 8.41 p.m. train from Carlisle to London was delayed at Crewe, owing to the engine being unable to create the necessary vacuum. Due to two small screws having got under the ejector clacks of engine. Failure of material.	
London and South-Western.	Vacuum Automatic Brake. (602 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	5,198,934 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 2	Six minutes delay at Vauxhall. Branch pipe of No. 228 composite carriage broken.	
		„ 5	Three minutes delay at Staines. Defective main train pipe on No. 99 covered carriage truck.	
		„ 5	Five minutes delay at Eastleigh. Brake of No. 332 third-class carriage hung up.	
		„ 8	Eight minutes delay at Exeter. Pipes between engine and tender open. Neglect of engineman.	
		„ 19	Four minutes delay in starting at Waterloo. Front drip-valve of engine split.	
		„ 24	Six minutes delay between Staines and Ashford. Branch pipe of No. 245 van broken.	
		„ 25	Two minutes delay at Yeovil Junction. Branch pipe of No. 95 composite carriage broken.	
		Aug. 1	Five minutes delay in starting at Waterloo. Pipe under ejector of engine loose.	
		„ 1	Five minutes delay at Brentford. Drip-valve of engine leaking.	
		„ 5	Fourteen minutes delay at Eastleigh. Miniature sack of No. 413 bogie composite carriage disconnected.	
		„ 15	Two minutes delay at Eastleigh. Branch pipe of No. 85 composite carriage broken.	
		„ 25	Slight delay at Woking. Dirt in ejector of engine.	
		Sept. 4	Fourteen minutes delay at Wimborne. Cylinder-ring of No. 1049 third-class carriage jammed.	
		„ 14	Eleven minutes delay at Bookham. Defective cylinder-ring of No. 146 van.	
		„ 25	Two minutes delay between Broad Clyst and Whimple. Hole in flexible pipe between engine and tender.	
		„ 27	Two minutes delay at Eastleigh. Cylinder bolts broken of No. 312 composite carriage.	
		„ 30	Three minutes delay at Waterloo. Dummy of No. 78 carriage-truck slipped down.	
		„ 30	Ten minutes delay at Waterloo. Main train pipe of No. 124 passenger brake-van broken.	

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London and South-Western—*cont*	Vacuum Automatic Brake —*cont.*	Oct. 5	Eighteen minutes delay on journey from Exeter to Yeovil Junction. Blocks rubbing wheels of No. 12 saloon carriage. Cause could not be ascertained.	
		,, 11	Eight minutes delay between Sidmouth Junction and Honiton. Piston of No. 949 bogie carriage disconnected.	
		,, 17	Eight minutes delay at Andover Junction. Brake of No. 125 covered carriage truck adjusted too tightly.	
		,, 27	Six minutes delay at Basingstoke. Flexible connection pipe of No. 990 third-class carriage defective.	
		Nov. 11	Thirteen minutes delay at Woking. Branch pipe of No. 29 passenger luggage-van defective.	
		,, 18	Nine minutes delay at Reading. Unable to release brake from wheels owing to blocks being frozen on to them.	
		,, 27	Fifteen minutes delay at Waterloo. Dirt in clapper valve of engine.	
		,, 30	Seven minutes delay at Waterloo. Vacuum pipe under foot-plate of engine broken.	
		Dec. 7	Six minutes delay at Salisbury. Gland-rings on Nos. 401 and 402 third and 401 first-class carriages leaking.	
		,, 14	Thirteen minutes delay at Andover Junction. Brake of No. 127 covered carriage truck adjusted too tightly.	
		,, 27	Sixteen minutes delay at Okehampton. Release valve dirty and diaphragm perished of No. 289 third-class carriage.	
		,, 29	Two minutes delay at Barnstaple. Vacuum branch pipe of No. 599 third-class carriage broken.	
		,, 30	Two minutes delay at Andover Junction. Vacuum pipe frozen on dummy of No. 406 passenger brake-van.	
	Westinghouse	No failures reported.	——	609½ miles.
London, Brighton, and South Coast.	Westinghouse Continuous Automatic Air Brake. (383 engines fitted. *See* Return No. 1.)		1. Nil.	3,858,405 miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		July 29	1.5 p.m. London to Epsom Downs overshot New Cross eight carriage lengths. Porter who coupled up at London Bridge omitted to open air-cock between engine and train, and driver and guards omitted to test the brake before starting, in accordance with instructions.	
		Sept. 21	5.28 p.m. London Bridge to Peckham Rye overshot platform at South Bermondsey three carriage lengths. Brake on one vehicle shut off, and brake blocks on four vehicles not properly adjusted.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 1	9.31 a.m. London Bridge to Brighton. delayed 7 minutes between Folly Hill and Keymer Junction. Main air delivery pipe broke at union collar adjoining donkey pump.	

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London, Brighton, and South Coast—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	July 1	6.50 a.m. London Bridge to Portsmouth special delayed 3 minutes between Billingshurst and Pulborough. Hose coupling of No. 174 second-class carriage burst.	
		,, 10	5.47 p.m. London to Dorking delayed 3 minutes on Ashtead Bank. Hose came off nipple of coupling head of No. 1079 brake.	
		,, 13	8.1 p.m. London Bridge to Newhaven Grande Vitesse delayed 3 minutes at Norwood Junction stop signal. Hose coupling on No. 195 third-class carriage burst.	
		,, 24	5.50 a.m. South Croydon to London delayed 3 minutes at Penge. Donkey-pump lower main valve ring broken.	
		,, 26	8.38 a.m. London Bridge to Wimbledon delayed 7 minutes between Peckham Rye and Tulse Hill. Slide-valve of triple of No. 438 second-class carriage worn.	
		Aug. 2	7.17 a.m. Mitcham Junction to London delayed 4 minutes at Mitcham Junction. Reversing piston rod and rings of donkey-pump broken.	
		,, 11	3.5 p.m. Seaford to Victoria delayed 3 minutes at Oxted. Bottom air clack and seating of donkey-pump blew out.	
		,, 19	10.15 a.m. Brighton to London delayed 2 minutes at Preston Park. Hose coupling on No. 91 Midland horse-box burst.	
		,, 22	12.30 p.m. Epsom Downs to London Bridge delayed 3 minutes at Sutton. Truss-rod of No. 407 second-class carriage came down. Block pin out.	
		,, 23	3.5 p.m. Wimbledon to London delayed 1 minute between East Dulwich and Peckham Rye. Hose coupling on No. 264 plain van burst.	
		,, 28	9.55 a.m. Eastbourne to London Bridge delayed 13 minutes at Polegate and Lewes, apparently through slide-valve of triple on No. 553 third-class carriage being worn.	
		,, 29	7.25 p.m. Hastings to London Bridge delayed 3 minutes between Berwick and Glynde. Hose coupling on No. 121 Midland horse-box burst.	
		Sept. 7	11.43 a.m. Eastbourne to Hastings delayed 3 minutes between Bexhill and St. Leonards. Main air copper delivery pipe broke at union collar adjoining donkey-pump.	
		,, 7	9.58 a.m. London Bridge to Battersea Park delayed 4 minutes at London Bridge. Donkey-pump reversing ring broken.	
		,, 25	12.10 p.m. Portsmouth to Victoria delayed 5 minutes between Chichester and Horsham. Branch pipe on No. 1710 Midland third-class carriage leaking at union.	
		,, 26	6.5 Hastings to London delayed 4 minutes Lewes and Cooksbridge. Coupling head packing ring on tender of engine split.	
		Oct. 3	4.6 p.m. London Bridge to Hastings delayed 5 minutes at Lewes. Hose coupling on No. 784 third-class carriage leaked.	

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London, Brighton, and South Coast—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	Oct. 5	12.15 p.m. Shoreditch to Peckham Rye delayed 2 minutes near Wapping. Donkey-pump lower main valve bush worn and leakage in branch pipe union on No. 750 third-class brake.	
		„ 16	4.15 p.m. Sutton to Victoria delayed 3 minutes at Grosvenor Road. Brake branch pipe on No. 1710 Midland third-class carriage leaking at union to main pipe.	
		„ 25	3.22 p.m. Victoria to Eastbourne delayed 7 minutes between Croydon and Earlswood. ½-in. cock leaked in plug on No. 251 composite carriage.	
		„ 29	9.11 a.m. London Bridge to Wimbledon delayed 2 minutes at London Bridge. Reversing piston chamber bush of donkey-pump blew at joint.	
		Nov. 17	5.50 a.m. South Croydon to London Bridge delayed 3 minutes at South Croydon. Hose coupling on engine burst.	
		„ 20	3.45 p.m. Brighton to Victoria delayed 3 minutes between Horley and Earlswood. Grit in triple valve.	
		„ 21	11.45 a.m. Hastings to London Bridge delayed 2 minutes at Polegate. Coupling head packing ring on No. 334 composite carriage worn.	
		„ 22	11.0 a.m. Portsmouth to London delayed 2 minutes between Chichester and Arundel. Slide-valve of triple worn.	
		Dec. 12	10.40 a.m. Victoria to Brighton delayed 11 minutes at East Croydon. Donkey-pump failed; probably obstruction in the ports.	
		„ 22	1.45 p.m. Brighton to London Bridge delayed 4 minutes at Brighton. Leakage at packing ring of hose coupling on No. 219 van.	
		„ 27	7.30 p.m. Brighton to London delayed 10 minutes between Brighton and Croydon. Slide-valve of triple worn.	
		„ 31	9.30 p.m. Shoreditch to New Cross delayed 1 minute at Whitechapel. Coupling head packing ring on No. 745 third-class brake defective.	
		„ 31	8.30 p.m. Shoreditch to Peckham Rye delayed 7 minutes. Coupling head packing ring on No. 745 third-class brake defective.	
		No failures reported.	—	Automatic Vacuum brake. 9,110 miles.
London, Chatham, and Dover.	Westinghouse Continuous Automatic Air Brake. (196 engines fitted. *See* Return No. 1.)		1. Nil.	1,958,917 miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		Aug. 10	10.0 p.m. special Canterbury to Faversham. Overshot platform at Selling a train's length, cock shut on fourth coach from engine (12 on). Four minutes delay.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brake.*	
		July 1	10.50 a.m. Ashford to Sevenoaks. Two minutes between Wrotham and Kemsing. Coupling hose burst on Midland Company's brake-van No. 145.	

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London, Chatham, and Dover—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	July 1	3.25 p.m. Victoria to Ramsgate. Ten minutes through weak spring in train pipe cock on No. 4 brake-van.	
		„ 5	7.15 p.m. Dover to Victoria. Six minutes between Teynham and Sittingbourne, coupling hose burst on Midland Company's fruit van No. 333.	
		„ 11	3.27 p.m. Victoria to Moorgate Street. Eight minutes at Smithfield through leakage at hose pipe union nuts. First class No. 202, third class No. 68.	
		„ 18	6.0 p.m. Dover to Victoria. Six minutes between Canterbury and Faversham, coupling hose bursting on No. 50 composite.	
		„ 21	10.0 a.m. Victoria to Dover. Three minutes between Bekesbourne and Adisham through leakage at hose pipes where clipped on to the nozzle. No. 89 second class.	
		„ 22	10.50 p.m. Swanley to Maidstone. Ten minutes between Wrotham and Malling through lubricator of pump not working properly.	
		„ 22	10.0 a.m. Ramsgate to Victoria. Eight minutes at Cuxton Road, coupling hose burst on No. 229 first class.	
		Aug. 4	8.48 p.m. Faversham to Ramsgate. Seven minutes through pipe leading from driver's brake valve to small reservoir bursting at Whitstable.	
		„ 8	5.50 p.m. Barnet to Victoria. Six minutes at Southgate, coupling hose burst on No. 86 first class.	
		„ 16	7.20 a.m. Victoria to Dover. Five minutes at Herne Hill, coupling hose burst on London, Brighton, and South Coast Railway carriage truck No. 58.	
		„ 17	4.24 p.m. Sevenoaks to Victoria Five minutes at Kent House, main valve of driver's brake valve off the face.	
		„ 19	3.25 p.m. Victoria to Ramsgate. Five minutes at Herne Hill releasing brakes on attaching City portion. Fault of driver.	
		„ 21	8.0 p.m. Ramsgate to Victoria. Ten minutes at Sole Street, weak retaining valve spring in driver's brake-valve.	
		„ 22	6.0 p.m. Dover to Victoria. Six minutes, coupling hose burst on No. 194 third class.	
		„ 25	3.25 p.m. Victoria to Ramsgate. Seven minutes at Bickley, triple valve not properly tightened up on No. 221 first class, and seven minutes at Herne Bay, defective hose pipe washer on No. 93 third class.	
		„ 25	12.35 p.m. Victoria to Ramsgate. Five minutes at Teynham, releasing brake on No. 87 third class, piston travel short.	
		„ 26	2.0 p.m. Holborn to Ramsgate. Three minutes at New Brompton and nine minutes on Ramsgate Branch releasing brakes, broken main cock on No. 8 luggage van.	
		„ 27	10.15 a.m. Victoria to Gravesend. Three minutes at Bickley, reversing piston broke of pump.	
		„ 28	9.0 a.m. Sheerness to Victoria. Seven minutes at Chatham, coupling hose burst on No. 289 London, Brighton, and South Coast Railway third class.	

1. Name of Railway Company.	2. Name or Description of brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
London, Chatham, and Dover—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	Sept. 1	2.30 p.m. Ramsgate to Victoria. Five minutes at Kent House, defect in driver's brake valve, and leaky hose pipe washer, No. 17 third class.	
		,, 6	5.30 p.m. Victoria to Maidstone. Nine minutes at Herne Hill changing engine through pump failing, reversing piston rings broke.	
		,, 14	4.20 p.m. Victoria to Dover. Seven minutes, coupling hose burst on No. 102 second class.	
		,, 17	7.0 p.m. Ramsgate to Victoria. Seven minutes at Strood, hose pipe union nut slacked back of No. 68 third class.	
		,, 18	11.30 a.m. Victoria to Ramsgate. Three minutes at Chatham, coupling hose burst on No. 281 third class.	
		,, 18	5.0 p.m. Faversham to Victoria. Ten minutes between Sittingbourne and Newington, hose pipe blown out of nipple, No. 94 third class, material perished.	
		,, 21	8.25 a.m. Ashford to Sevenoaks. Five minutes through waste water plug being knocked out of main reservoir by engine coming in contact with a piece of rock between Malling and Wrotham.	
		,, 26	8.53 p.m. Victoria to Moorgate Street. Three minutes just after starting from Victoria through hose pipes between engine and brake carriage coming uncoupled, improperly connected.	
		,, 27	5.25 p.m. Chatham to Dover. Eight minutes at Kearsney, coupling hose burst on No. 2,071 meat waggon.	
		,, 29	2.45 p.m. Dover to Victoria. Six minutes at Buckland Junction, coupling hose burst on No. 70 second class.	
		Oct. 10	5.25 p.m. Chatham to Dover. Six minutes at Rainham, triple valve piston ring tight in the groove, No. 168 first class.	
		,, 11	6.45 a.m. Dover to Holborn. Five minutes late in starting, detaching No. 712 luggage van with a leaky hose pipe washer.	
		,, 23	4.20 p.m. Victoria to Dover. Four minutes at Herne Hill through reversing piston of pump breaking.	
		Nov. 2	4.55 a.m. Bickley to Holborn. Thirty minutes delay through irregular action of the brake after attaching three foreign vehicles at Bromley. Platform at Beckenham also overshot three coach lengths.	
		,, 11	5.40 p.m. Ashford to Sevenoaks. Fifteen minutes at Charing and Lenham, coupling hose leaking at the nozzle on No. 21 first class.	
		,, 13	6.25 p.m. Kent House to Victoria. Three minutes, defective hose pipe washer on No. 31 third class.	
		,, 18	3.0 p.m. Ashford to Sevenoaks. Eight minutes between Malling and Sevenoaks through union nut of main air pipe from pump to reservoir leaking.	
		,, 19	7.55 p.m. Swanley to Victoria. Nine minutes at Bickley and Kent House through breakage of draw bar hooks on brake-van No. 8, irregular working of brake due to copper pipe from the small reservoir to brake valve splitting.	

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London, Chatham, and Dover—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	Dec. 4	10.0 a.m. Ramsgate to Victoria. Two minutes just after leaving Ramsgate, defective hose pipe washer in No. 327 third class.	
		„ 8	10.0 a.m. Victoria to Dover. Ten minutes through leakage at joint of main pipe from the pump to the reservoir next the reservoir.	
		„ 22	1.30 p.m. Victoria to Dover. Five minutes at Selling through collar coming off copper pipe leading from main reservoir to pressure gauge.	
		„ 22	7.40 p.m. Victoria to Bickley. Two minutes at Herne Hill, escape valve spring in driver's brake valve broken.	
	Automatic Vacuum Air Brake. (8 engines fitted. *See* Return No. 1.		1 and 2 Nil.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 6	7.8 a.m. Special from Ludgate to Ramsgate, Great Northern Company's stock. Three minutes at Penge through leaky coupling hose washers on No. 150 first and No. 585 second class.	2,136 miles.
Londonderry (Seaham and Sunderland.)	- - -	No failures reported.	—	Westinghouse Automatic Brake. 19,980 miles.
London, Tilbury, and Southend.	Westinghouse Automatic Brake. (36 engines fitted. *See* Return, No. 1.)		1 and 2. Nil.	472,009 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Aug. 15	12.38 p.m. train Fenchurch Street to Tilbury. Pipe burst on donkey pump of engine No. 16 at Bromley. Hand-brake used Bromley to Tilbury. No delay.	
		Oct. 18	9.50 p.m. train Tilbury to Fenchurch Street. Donkey engine stopped working owing to some dirt getting into main valve, engine No. 35. Hand brake used Tilbury to Purfleet. Two minutes delay.	
		„ 30	7.33 p.m. train Shoebury to Fenchurch Street. Air pump exhaust steam pipe on engine No. 18 became partially blocked. Hand brake used Hornchurch to Fenchurch Street. No delay.	
Manchester and Milford.	—		—	Automatic Vacuum Brake. 23,843 miles.
Manchester, Sheffield, and Lincolnshire.	Vacuum Automatic Brake. (224 engines fitted, and 349 goods engines available for passenger trains as occasion may require. *See* Return No. 1.)		1 and 2 Nil.	1,929,964 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Aug. 10	9.45 p.m. Cleethorpes to New Holland. At New Clee. Overran platform. Train not connected to engine (No. 68). Neglect of staff.	
		„ 13	8.45 a.m. Sheffield to Cleethorpes. On journey. Leakage. Diaphragm in ball valve casting of brake-van No. 519 worn through. Ordinary wear and tear.	

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Manchester, Sheffield, and Lincolnshire—*cont.*	Vacuum Automatic Brake—*cont.*	Aug. 25	2.43 p.m. Nottingham to Chesterfield. At Staveley Town. Ejector steam pipe of engine No. 541 burst. Ordinary wear and tear.	
		Oct. 20	6.35 p.m. Hadfield to Manchester. Between Fairfield and Gorton. Clappet valve washer of engine No. 574 failed. Ordinary wear and tear.	
Manchester South Junction and Altrincham.	- - -	No failures reported.	—	Automatic Vacuum Brake. 116,036 miles.
Maryport and Carlisle	- - -	No failures reported.	—	Automatic Vacuum Brake. 98,911 miles.
Mawddwy - -	- - -	No failures reported.	—	Automatic Vacuum Brake. 9,531 miles.
Mersey Railway -	- - -	No failures reported.	—	Vacuum Automatic Continuous Brake. 147,630 miles.
Metropolitan - -	Automatic Vacuum Brake. (70 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	1,087,419 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	106,510 trains.
		Aug. 10	When stopping at Edgware Road with an up circle train the driver discovered something wrong with his brake, and a delay of five minutes ensued, finding the cause, &c., which was that a nut had slacked back, thus allowing the brake to leak on. No. 23 engine.	
		„ 11	After stopping at High Street, Kensington Station, the driver could not blow off the brake, and a delay of two minutes ensued. The cause was found to be due to a rusty pin in the handle of the valve in No. 265 coach, causing the valve to stick open.	
		„ 21	After stopping at Aldgate with an up circle train the driver could not blow off the brake, and a delay of two minutes ensued. The cause was found to be due to a roll of oil cloth having fallen against the valve in No. 263 coach, causing it to open.	
		„ 30	An up circle train was stopped suddenly on entering Aldgate Station, and having to draw up to the platform caused a delay of four minutes. A defect apparently existed in the brake gear of No. 305 coach, but could not be discovered.	
		Sept. 1	The above coach caused another delay at Baker Street, the driver being unable to start with a train. The train was put into a siding for examination, and it was discovered that an india-rubber ring on the brake cylinder was out of position.	

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Metropolitan—*cont.*	Automatic Vacuum Brake —*cont.*	Sept. 6	The driver of an up Hammersmith train could not keep his brake off and it was found the joint between the train pipe and combination ejector had partly drawn. No. 26 engine. Fault of servant. Train delayed 6½ minutes.	
		„ 18	No 59 engine with an up Hammersmith train had to be exchanged at Edgware Road, as the small ejector would not keep the brake off. On examination the nozzle of the cone was found to be choked with dirt. Fault of servant. Train delayed three minutes.	
		Oct. 4	A down train was delayed two minutes at Willesden Green, the brake having hung up on No. 149 coach. It was subsequently found the india-rubber ring in the cylinder had become displaced.	
		„ 14	A down train was delayed three minutes changing engines, No. 34 having lost a portion of the drip valve. It had not been properly screwed up after examination. Fault of servant.	
		Nov. 8	After stopping at South Kensington Junction with an up circle train the driver could not blow off his brake, being short of steam, and a delay of 2½ minutes ensued. Engine No. 23.	
Metropolitan District -	Westinghouse Automatic Brake. 54 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	761,090 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 21	On leaving Mark Lane Station with the 10.30 a.m. down train from High Street, Kensington, the air-pipe of brake came off the iron nipple on main air pipe of No. 43 engine, causing three minutes delay.	
		Aug. 14	The 8.10 a.m. down train from High Street was, owing to an air pipe under No. 15 engine becoming defective, brought to a stand between Ray Street and Granville Street signal boxes, on the Metropolitan Railway, causing delay to traffic.	
		Sept. 9	With the 10.0 p.m. down circle train from High Street, the driver was unable to release the brakes at that station, owing to his air pump failing on No. 30 engine, causing three minutes delay.	
		Oct. 27	The 6.40 a.m. train from Hammersmith to Ealing was delayed 2½ minutes in running to Turnham Green, owing to the small spindle in triple valve of No. 123 third-class coach breaking, which allowed the air to escape.	
		Nov. 21	The air pump failed on No. 10 engine with the 7.30 p.m. down train from High Street, Kensington, necessitating the hand brakes being used.	
Midland - -	Vacuum Automatic Brake. (1,237 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	7,508,626 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Aug. 1	5.3 p.m. train from Chesterfield to Derby. 6 minutes delay near Derby. Train was stopped by flange of copper pipe on engine No. 41 breaking.	

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Midland—*cont.*	Vacuum Automatic Brake. —*cont.*	Aug. 15	2.0 p.m. train from London to Manchester. 8 minutes delay near Bedford, through copper pipe on pilot engine No. 907 breaking.	
		„ 28	3.48 p.m. train from Derby to London. 8 minutes delay at Mountsorrel, where train was stopped by copper pipe of engine No. 77 breaking.	
		Oct. 17	12.0 noon train from Barnsley to Cudworth. 4 minutes delay at Monk Bretton, in consequence of defect in pipe of slip composite No. 534.	
		Dec. 2	4.55 p.m. train from Bradford to London. 5 minutes delay at Kilnhurst, examining for slight leakage. Dirt had collected in check valve of engine No. 49. Neglect of servants.	
	Westinghouse Automatic Air Brake (11 engines fitted. *See* Return No. 1.)		1. and 2. Nil.	4,370 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 14	12.45 a.m. train from Carlisle to Manchester and Liverpool. 9 minutes delay near Armathwaite, where train was stopped by thread stripping off air pipe nut next engine triple valve.	
		Aug. 7	6.45 a.m. train (No. 73 special) Bradford to Morecambe. 6 minutes delay at Bell Busk, through triple valves sticking on Midland Scotch Joint Stock bogie carriages No. 3 and 13.	
		Sept. 19	11.0 p.m. train (No. 83 special) from London to York. 18 minutes delay at Haverstock Hill, Killamarsh, and Masborough, owing to triple valve sticking on North-Eastern carriage No. 1190, and its tyres being hot.	
		Dec. 6	5.20 p.m. train from Skipton to Bradford. 5 minutes delay at Guiseley, in consequence of air pump of engine No. 809 ceasing to work, owing to spindle of top piston bending.	
Midland and South-Western Junction.	- - - -	No failures reported.	—	Automatic Vacuum. 120,957 miles.
Neath and Brecon	- - - - -	No failures reported.	—	Automatic Vacuum. 14,836 miles.
North-Eastern	The Westinghouse Automatic Brake. (456 engines fitted, exclusive of 154 goods engines used occasionally.)		1. Nil.	6,348,270¾ miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		Sept. 2	2.50 p.m. train, Saltburn to Darlington, engine No. 362. Overran the platform at Marske. One of the inch cocks (between the second and third vehicles from the engine) being shut. Fault of guard not testing the brake.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 3	5.35 p.m. train, Malton to Driffield, engine No. 1502. 5 minutes lost. Donkey pump stopped. The main piston valve stopper broken. Faulty material.	

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North-Eastern—*cont.*	The Westinghouse Automatic Brake —*cont.*	July 11	3.27 p.m. train, Thirsk to Leeds, engine No. 673. 2 minutes lost between Arthington and Holbeck. Donkey pump stopped. One of the reversing piston rings broken and piston jammed. Faulty material.	
		„ 15	4.20 p.m. train, Newcastle to North Wylam, engine No. 484. 7 minutes lost. Donkey pump stopped. The reversing valve chamber broken.	
		„ 15	7.50 p.m. train, Edinboro' to Newbiggin, engine No. 1607. 3 minutes lost between Morpeth and Newbiggin. Donkey pump stopped. The main valve piston being too tight.	
		„ 17	4.5 p.m. train, Newcastle to Leeds, engine No. 1529. 10 minutes at North Stockton. Hose-pipe on L. & N.W. saloon No. 7 burst. Defective hose-pipe.	
		„ 20	1.55 p.m. train, West Hartlepool to Leeds, engine No. 846. 10 minutes between Wormald Green and Nidd Bridge. The hose-pipe on composite carriage No. 231 burst. Defective hose-pipe.	
		„ 23	9.28 p.m. train, York to Normanton, engine No. 156. 3 minutes at Copmanthorpe. The hose-pipe on Mid. and N.E. Joint P.O. van No. 7 burst.	
		„ 24	8.5 p.m. train, Edinboro' to York, engine No. 1621. 4 minutes between Belford and Lucker. The hose-pipe on E.C. brake third No. 78 burst.	
		„ 27	5.20 p.m. train, Leeds to Thirsk, engine No. 689. 4 minutes at Leeds Junction, the brake being on upon composite carriage No. 67. Fault of driver.	
		Aug. 3	9.35 a.m. train, Sunderland to Durham, engine No. 1501. 11 minutes lost by the donkey pump stopping. The copper casket between the top head and steam cylinder broken, allowing the steam to escape. Faulty material.	
		„ 4	3.5 p.m. train, Newcastle to Carlisle, engine No. 365. 6 minutes at Newcastle, the main pipe on waggon No. 60,531 broken. Faulty material.	
		„ 7	1.45 p.m. train, Newcastle to Morpeth, engine No. 953. 7 minutes lost, the donkey pump stopping, the reversing valve rod broken. Faulty material.	
		„ 12	10.0 a.m. train, Edinboro' to York, engine No. 925. 2 minutes at Tollerton. The hose-pipe on East Coast first-class carriage No. 88 burst.	
		„ 12	6.25 p.m. train, York to Edinboro', engine No. 1629. 8 minutes at Berwick changing hose-pipe on East Coast composite carriage No. 133, a leak at the nipple end.	
		„ 12	8.18 p.m. train, East to West Hartlepool, engine No. 1580. 2 minutes lost. Donkey pump stopped, the portways being blocked with caked oil and dirt caused by the excessive use of oil Fault of driver.	
		„ 14	3.25 p.m. train, Newcastle to Sunderland, engine No. 1577. 3 minutes at East Boldon. Hose-pipe on third-class carriage No. 1580 burst.	
		„ 16	2.0 p.m. train, Newcastle to York, engine No. 464. 7 minutes at Pelaw Main. Hose-pipe on waggon No. 60,274 burst. Defective pipe.	

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North-Eastern—*cont.*	The Westinghouse Automatic Brake —*cont.*	Aug. 17	6.20 a.m. train, Carlisle to Newcastle, engine No. 1492. 3 minutes at Hexham changing engines. The donkey pump steam pipe nipple broken. Defective material.	
		,, 18	3.35 p.m. train, Whitby to Stockton, engine No. 664. 8 minutes at Glaisdale. Hose-pipe on third-class carriage No. 2721 burst.	
		,, 19	11.5 p.m. train, Leeds to Harrogate, engine No. 803. 6 minutes at Leeds changing hose-pipes on van No. 195 and engine, the coupling washers being faulty. Neglect of servants.	
		,, 22	8.15 p.m. train, Doncaster to York, engine No. 1933. 10 minutes at Doncaster. Hose-pipe on fish waggon No. 33,079 burst.	
		Sept. 1	2.55 p.m. train, Hartlepool to Newcastle, engine No. 454. 9 minutes at West Hartlepool. Hose-pipe coupling on fish-waggon No. 61,444 defective. Broken casting.	
		,, 5	8.15 p.m. train, Hull to Beverley, engine No. 1855. 3 minutes lost. Donkey pump stopped. Reversing piston-rod broken. Faulty material.	
		,, 7	6.5 p.m. train, Coldstream to Alnwick, engine No. 1501. 105 minutes at Whittingham. Donkey pump stopped (had to get another engine). One of the air valves broken, a part of which got into the air cylinder and prevented the piston working. Faulty material.	
		,, 9	12.30 p.m. train, Saltburn to Consett, engine No. 131. 13 minutes lost between Tow Law and Consett. Donkey pump stopped, the main piston valve rod broken. Faulty material.	
		,, 12	8.17 a.m. train, Consett to Saltburn, engine No. 1915. 3 minutes lost. Donkey pump stopped. One of the upper main valve rings broken. Faulty material.	
		,, 14	7.42 a.m. train, Darlington to Saltburn, engine No. 135. 3 minutes at Darlington. Brake on upon horse-box No. 20. Fault of driver.	
		,, 16	3.35 a.m. train, York to Edinburgh, engine No. 1477. 2 minutes at Ferryhill. The pipe from the donkey pump to main reservoir broken near the reservoir end. Faulty pipe.	
		,, 16	3.35 a.m. train, York to Edinbro', engine No. 1477. 10 minutes between Croxdale and Browney. The air-pipe from the driver's valve to main reservoir broken at the reservoir end. Faulty pipe.	
		,, 16	2.15 p.m. train, York to Saltburn, engine No. 844. 3 minutes at Eaglescliffe. The washer in the hose-pipe on engine defective. Faulty manufacture.	
		,, 20	3.20 p.m. train, New Bridge Street to Central, Newcastle, engine No. 958. 2 minutes late start. Hose-pipe on composite-carriage No. 134 burst.	
		,, 23	3.45 a.m. train, York to Newcastle, engine No. 926. 8 minutes at Bradbury. Hose-pipe on Midland and North East Joint Post Office van No. 7 burst.	

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North-Eastern—*cont.*	The Westinghouse Automatic Brake —*cont.*	Sept. 30	1.45 p.m. train, Leeds to Church Fenton, engine No. 1449. 3 minutes at Collingham Bridge, the brake being on upon third-class carriage No. 2327. The slide valve spring of quick acting triple valve broken. Faulty material.	
		„ 30	4.0 p.m. train, Newcastle to York, engine No. 1526. 7 minutes at Bishop's House, the brake going on upon the train. The pipe from driver's valve to small reservoir broken at reservoir end. Faulty pipe.	
		Oct. 7	8.10 p.m. train, Leeds to Ilkley, engine No. 166. 6 minutes lost. Donkey pump stopped. One of the reversing piston rings broken, a part of which jammed the piston. Faulty ring.	
		„ 11	4.5 p.m. train, Newcastle to Leeds, engine No. 96. 1 minute at Stockton and 4 minutes at Thirsk. The pipe from donkey pump to main reservoir having worn into a hole by rubbing against the side of boiler, causing a leak.	
		„ 13	10.25 p.m. train, York to Newcastle, engine No. 1524. 9 minutes at Darlington. Hose-pipe on London and North-Western carriage truck No. 13 burst.	
		„ 17	10.40 a.m. train, New Bridge Street to Central, Newcastle, engine No. 465. 5 minutes at Willington Quay. The half-inch cock on third-class carriage No. 1935 broken. Faulty material.	
		„ 18	9.10 p.m. train, Newcastle to Alnwick, engine No. 845. 36 minutes lost from Forest Hall. Donkey pump stopped. The main piston valve rod broken. Faulty material.	
		„ 20	5.40 p.m. train, Normanton to York, engine No. 693. 8 minutes at Normanton detaching van No. 248 owing to it having hose-pipe burst. Defective pipe.	
		„ 21	2.40 p.m. train, York to Newcastle, engine No. 1476. 2 minutes between Northallerton and Darlington. A leak in the hose-pipe on third-class carriage No. 2052. Defective hose-pipe.	
		„ 22	1.25 p.m. train, Normanton to Newcastle, engine No. 1520. 5 minutes at Relly Mill, the brake being on upon third-class carriage No. 2923.	
		„ 23	7.35 p.m. train, Edinburgh to York, engine No. 640. 11 minutes at Darlington taking hose-pipe off (Post Office van No. 417) which had burst, and putting a new one on. Faulty hose-pipe.	
		„ 27	1.0 a.m. train, York to Edinburgh, engine No. 514. 6 minutes at York. Hose-pipe on East Coast composite-carriage No. 70 burst.	
		Nov. 3	10.15 a.m. train, Leeds to Church Fenton, engine No. 692. 5 minutes between Thorparch and Church Fenton. Donkey pump stopped. One of the reversing piston rings broken. Defective ring.	
		„ 3	12.30 p.m. train, Newcastle to Tynemouth, engine No. 226. 7 minutes lost. The iron pipe under the buffer beam of waggon No. 25,815 split near the swan neck. Faulty pipe.	
		„ 6	2.10 p.m. train, Newcastle to South Shields, engine No. 625. 2 minutes at Tyne Dock. The top valve string in driver's valve broken. Faulty spring.	

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North-Eastern—*cont.* -	The Westinghouse Automatic Brake —*cont.*	Nov. 10	9.0 a.m. train, Sunderland to South Shields, engine No. 319. 3 minutes late starting. Hose-pipe on engine burst. Defective hose.	
		„ 29	7.35 p.m. train, Harrogate to Pateley Bridge, engine No. 955. 5 minutes lost. Donkey pump stopped. The reversing piston ring broken. Faulty material.	
		„ 29	10.15 p.m. train, Harrogate to Knaresboro', engine No. 1438. 2 minutes at North Cabin, the brake being on upon third-class carriage No. 1699. Fault of driver.	
		Dec. 1	5.20 a.m. train, South Shields to Newcastle, engine No. 1439. 6 minutes lost. Donkey pump stopped. One of the upper main piston valve rings broken, part of which got into the steam way of the bush and jammed the piston.	
		„ 4	11.55 p.m. train, York to Edinbro', engines Nos. 18 and 1624. 6 minutes at Marshall Meadows, the brake being on upon East Coast third-class carriages Nos. 17 and 138 and East Coast vans Nos. 83 and 111.	
		„ 9	8.15 p.m. train, Sunderland to Newcastle, engine No. 1490. 10 minutes at Luke's Lane by the brake going on, the pipe leading from the donkey pump to main reservoir broken off at the donkey pump end. Faulty pipe.	
		„ 12	8.20 a.m. train, Newcastle to Berwick, engine No. 912. 4 minutes at Widdrington Junction, the brake going on. The collar on the pipe leading from the donkey pipe to main reservoir broken off at the donkey pump end. Faulty brazing.	
		„ 14	6.10 a.m. train, Newcastle to Durham, engine No. 72. 3 minutes between Ebchester and Shotley Bridge. The pipe between the air case and reservoir broken near to the collar.	
		„ 18	2.30 p.m. train, Edinbro' to York, engines Nos. 853 and 1545. 13 minutes at Tweedmouth. The brake became applied on the whole of the train. The cause of the brake being applied could not be discovered.	
	Vacuum Automatic Brake. (6 engines fitted *See* Return No. 1.)		1. and 2. Nil.	26,324 miles.
			3 *Delay in the working of trains in consequence of defects in or improper action of brakes.*	
		July 15	12.42 a.m. train, York to Edinboro', engine No. 1518. 17 minutes after passing Skelton Bridge, the iron pipe on tender giving way. Fault of servant.	
North London -	Automatic Vacuum Brake. (79 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	935,752 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		„ 5	Three minutes delay at Hammersmith, through brake cylinder of engine No. 108 sticking up. Failure of material.	
		„ 13	Three minutes delay between Devons Road and Broad Street, through carriage No. 36 brake piston sticking up. No definite cause arrived at.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
North London—*cont.*	Automatic Vacuum Brake —*cont.*	Dec. 27	Six minutes delay between Poplar and Broad Street, through No. 47 brake not working properly. A temporary leak in one of the couplings. Failure of material.	
North Staffordshire -	- - -	No failures reported.	——	Automatic Vacuum 686,640 miles.
North Wales (Narrow Gauge).	- - -	No failures reported.	——	Westinghouse.
Pembroke and Tenby -	- - -	No failures reported.	——	Automatic Vacuum 45,260½ miles.
Pontypridd, Caerphilly, and Newport.	- - -	No failures reported.	——	Vacuum Automatic Brake. 6,290 miles.
Rhondda and Swansea Bay.	- - -	No failures reported.	——	Automatic Vacuum 28,199¼ miles.
Rhymney - -	- - -	No failures reported.	——	Westinghouse Automatic Brake. 101,706 miles.
Severn and Wye and Severn Bridge.	- - -	No failures reported.	——	Vacuum Automatic Brake. 33,344 miles.
Somerset Joint Committee.	- -	No failures reported.	——	Vacuum Automatic Brake. 311,514 miles.
South-Eastern - -	Automatic Vacuum Brake. (344 engines fitted. *See* Return No. 1.)		1. and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	3,151,835 miles.
		July 9	The 8.45 p.m. down Dartford train was delayed three minutes at Cannon Street owing to a difficulty in uncoupling the brake pipes. It was found that this was caused by a slight burr on the lug of the brake pipe of engine No. 323.	
		„ 16	The 7.25 p.m. up Tonbridge train was delayed five minutes at B. signals London Bridge in consequence of engine No. 135 being unable to release the brake on the train. The train was afterwards examined, and the brake found to be in good order.	
		„ 18	The 8.28 p.m. up Ashford train was delayed eight minutes at Pluckley attaching horse-box No. 68 to carriage truck No. 135, owing to the shunter being unable to get the brake pipes coupled. The couplings were afterwards examined and found to be in good order.	
		„ 19	The 12 noon down Maze Hill train was delayed five minutes at Cannon Street owing to the brake pipe on engine No. 5 being defective. The hose had been partly torn from the coupling up.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
South-Eastern—*cont.* -	Automatic Vacuum Brake —*cont.*	Aug. 23	The 8.6 a.m. up Charlton train was delayed seven minutes at Cannon Street No. 2 signals owing to part of the iron train pipe under the bunker of engine No. 237 having broken.	
		„ 28	The 8.20 a.m. up Blackheath train overran Lewisham platform the length of the train. It was found that the brake pipes between third-class carriages Nos. 1135 and 1014 were not coupled up, and that the driver had left Blackheath without having formed a vacuum.	
		Sept. 16	The 5.30 a.m. up Dover train was delayed one minute at Halstead owing to the nipple attaching the gauge pipe to the train pipe on engine No. 212 having broken off.	
		„ 18	The 5.50 p.m. down Dartford train was delayed two minutes at Woolwich Arsenal owing to the brake on luggage van No. 72 being on. The brake on this van was afterwards tested and found to be in good working order.	
		„ 30	The 2.15 p.m. up Dartford train lost two minutes owing to engine No. 322 having a difficulty to keep the brake blocks off the wheels in the train. A leakage was found at the joint of the iron train pipe of second-class carriage No. 145.	
		Oct. 7	The 5.10 p.m. down Reading train was delayed five minutes at Aldershot North Camp owing to engine No. 245 having lost the brake drip-valve.	
		„ 19	The 1.50 p.m. Enfield to Woolwich Arsenal train was delayed three minutes near Finsbury Park owing to the brake going on. It was found that one of the simple vacuum brake pipes of engine No. 181 was ruptured.	
		„ 30	The 10.0 a.m. up Greenwich train was suddenly stopped by the brake after starting from Cannon Street and delayed two minutes. The driver of engine No. 359 had not interfered with the brake, and it is supposed that a guard's valve had been tampered with.	
		Nov. 2	The 4.50 p.m. Woolwich to Muswell Hill train was delayed two minutes at Caledonian signals and one minute at Stroud Green owing to the driver being unable to keep the brake off. It was found that the brake on third-class carriage No. 1434 had been adjusted too closely to the wheels.	
		„ 8	The 2.33 p.m. up Maze Hill train was delayed two minutes at Waterloo owing to the rubber train pipe between engine and tender No. 231 collapsing in consequence of the failure of the internal wire.	
		„ 23	The 7.2 a.m. train, Chislehurst to Cannon Street, was delayed three minutes at Grove Park owing to the driver being unable to release the brake. It was found that some ice had formed in the ball valve chamber of No. 227 tender.	
		„ 23	The 5.56 p.m. Dunton Green train was delayed seven minutes at Dunton Green owing to the piston-rod packing ring of the tender of engine No. 90 being defective.	

1. Name of Railway Company.	2. Name or Description of brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
South-Eastern—*cont.*	Automatic Vacuum Brake —*cont.*	Nov. 27	The 5.35 p.m. Westerham to Dunton Green train was delayed four minutes in starting owing to the piston-rod packing ring of the tender of engine No. 90 being defective and causing a leakage.	
		Dec. 2	The 3.25 p.m. down Margate express was delayed one minute after starting from Ashford owing to a leakage at the dummy of the rear vehicle (brake van No. 293). The coupling had not been properly placed on the dummy by the shunter at Ashford.	
		„ 2	The 8.28 a.m. Bromley to Cannon Street train was delayed eight minutes at Plaistow owing to a leakage at the brake piston rod packing ring of engine No. 272.	
		„ 2	The 10.50 a.m. special empty train, Charing Cross to Rotherhithe Road, was delayed seven minutes at Charing Cross owing to the driver being unable to release the brake on engine No. 40. It was found that the brake cylinder cover of engine was broken.	
		„ 16	The 10.42 a.m. Hastings to Charing Cross train was delayed ten minutes at Etchingham owing to the brass bush of piston gland of brake of luggage van No. 150 being missing.	
		„ 16	The 8.14 a.m. Purley to Charing Cross train was delayed one minute at Cannon Street owing to the brake coupling on engine No. 303 being rather tight for the carriage coupling. The coupling was slightly reduced with a file, and afterwards worked properly.	
		„ 30	The 6.37 p.m. Elmer's End to Hayes train was delayed six minutes at Eden Park owing to the tender brake of engine No. 21 dragging, necessitating the piston being disconnected. This was caused by ice having formed in the ball valve chamber.	
		„ 30	The 10.10 a.m. Paddock Wood to Hawkhurst train was delayed eleven minutes between Paddock Wood and Horsmonden owing to the tender brake of engine No. 90 dragging. This was caused by ice having formed in the ball valve chamber.	
Taff Vale - -	Automatic Vacuum Brake. (46 engines fitted. *See* ReturnNo.1.)		1 and 2. Nil.	221,028 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Oct. 22	Failed to start train from Pontypridd Station. Brakes could not be released, a piece of waste having got into the hose pipe between the engine and the following coach.	
		Nov. 25	Failed to start train from Sully Station. The brakes could not be released in consequence of the hose pipe not having been properly placed on the dummy at the end of the train.	
		„ 30	Train brought to a stand at Maudy Junction in consequence of the hose pipe not having been properly placed on the dummy at the end of the train.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
West Lancashire -	- - -	No failures reported.	——	Westinghouse Automatic Brake. 91,994 miles.
Wirral - -	- - -	No failures reported.	——	Automatic Vacuum Brake. 92,891 miles.
Wrexham, Mold, and Connah's Quay.	- - -	No failures reported.	——	Automatic Vacuum Brake. 20,697 miles.
SCOTLAND.				
Caledonian - - -	Westinghouse Automatic Brake. (354 engines fitted. *See* Return No. 1.)		1 & 2. Nil.	3,718,297 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 12	9.10 a.m. train, Carlisle to Edinburgh, delayed 8 minutes at Kingsknowe. Cause: copper pipe on Caledonian horse-box No. 60 breaking.	
		„ 21	2.2 p.m. train, Glasgow to Ardrossan, delayed 2 minutes at Neilston. Cause: hose-pipe bursting on Caledonian third-class brake-carriage No. 413.	
		Aug. 2	4.0 p.m. train, Perth to Dundee, delayed 7 minutes at Barnhill. Cause: hose-pipe bursting on Caledonian meat-van No. 37,839.	
		„ 3	9.15 a.m. train, Aberdeen to Perth, delayed 12 minutes at Ferryhill. Cause: hose-pipe bursting on Caledonian horse-box No. 24.	
		„ 7	5.20 p.m. train, Coatbridge to Glasgow, delayed 5 minutes at Gartcosh. Cause: india-rubber washer of hose-pipe bursting on Caledonian engine No. 101.	
		Sept. 2	7.42 a.m. train, Ardrossan to Glasgow, delayed 5 minutes after starting from Ardrossan. Cause: hose-pipe bursting on Caledonian milk-truck No. 1527.	
		„ 8	7.35 p.m. train, Perth to Glasgow, delayed 7 minutes between Bridge of Allan and Glasgow. Cause: copper pipe on Caledonian engine No. 129 breaking.	
		„ 25	4.13 p.m. train, Glasgow to East Kilbride, delayed 4 minutes approaching Clarkston. Cause: hose-pipe bursting on Caledonian second-class carriage No. 828.	
		Oct. 5	6.12 a.m. train, Carlisle to Perth, delayed 4 minutes between Madgescroft and Cumbernauld. Cause: hose-pipe bursting on Caledonian engine No. 484.	
		„ 7	4.20 p.m. train, Edinburgh to Perth, delayed 8 minutes at Larbert. Cause: collar coming off pipe on Caledonian engine No. 43.	
		„ 11	10.0 a.m. train, Perth to Aberdeen, delayed 7 minutes at Marykirk. Cause: hose-pipe bursting on Caledonian fish-truck No. 38.	

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Caledonian—*cont.*	Westinghouse Automatic Brake—*cont.*	Oct. 18	1.50 p.m. train, Perth to Law Junction, delayed 5 minutes at Plean Junction. Cause: hose-pipe bursting on London and North-Western saloon carriage No. 91.	
		,, 19	5.13 p.m. train, Glasgow to Ardrossan, delayed 4 minutes at Giffen. Cause: copper pipe on Caledonian engine No. 97 breaking.	
		,, 28	2.0 p.m. train, Dundee to Arbroath, delayed 4 minutes at Camperdown Junction. Cause: hose-pipe bursting on Caledonian engine No. 25.	
		Nov. 13	8.25 p.m. train, Glasgow to Cathcart, delayed 4 minutes at Mount Florida. Cause: hose-pipe slipping off brass nipple on Caledonian first-class carriage No. 118.	
		,, 15	6.0 p.m. train, Edinburgh to Carstairs, delayed 5 minutes at Auchengray. Cause: copper pipe on Caledonian engine No. 111 breaking.	
		,, 17	4.10 p.m. train, Dundee to Kirriemuir, delayed 7 minutes between Dundee and West Ferry. Cause: hose-pipe bursting on Caledonian first-class carriage No. 130.	
		Dec. 4	5.5 p.m. train, Perth to Glasgow, delayed 5 minutes at Hilton Junction. Cause: hose-pipe bursting on Caledonian horse-box No. 76.	
		,, 15	10.0 a.m. train, Aberdeen to Perth, delayed 4 minutes at Glamis. Cause: hose-pipe bursting on Caledonian engine No. 66.	
		No failures reported.	——	Vacuum Brake. 10,428 miles.
Glasgow and South-Western.	Westinghouse Automatic Brake. (98 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	706,475 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 1	2.10 p.m. ex. Glasgow, 2 minutes at Shields Road, by hose-pipe between engine and tender No. 108 bursting, and 4 minutes at Paisley by brake binding on third No. 259.	
		,, 6	11.13 p.m. Special ex. Glasgow, 3 minutes at Kilmalcolm by coupling nut under air-valve chest slacking back engine No. 119.	
		,, 8	1.20 p.m. ex. Glasgow, 3 minutes between Dalry and Redstone by hose-pipe of carriage No. 40 bursting.	
		,, 15	11.15 a.m. ex. Stranrear, 3 minutes at Pinmore by brake binding on C.T. No. 12.	
		,, 26	10.0 p.m. ex. Glasgow, 4 minutes at Paisley by brake binding on rear portion of train.	
		,, 28	12.30 p.m. ex. Stranraer, 6 minutes on journey by hose-pipe at back of tender engine (No. 157) bursting.	
		Aug. 3	11.45 a.m. ex. Ardrossan, 5 minutes at Auchinharvie by hose-pipe between engine and tender (No. 63) coming off.	
		,, 17	1.50 p.m. ex. Ayr, 7 minutes at Johnstone by hose-pipe on third No. 387 bursting.	

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Glasgow and South-Western—*cont*	Westinghouse Automatic Brake—*cont.*	Aug. 18	7.30 p.m. ex. Glasgow, 3 minutes at Johnstone by hose-pipe on gas tank No. 2 bursting.	
		„ 19	10.0 p.m. ex. Glasgow, 2 minutes between St. Enoch and Shields Road by brake binding on third No. 475.	
		„ 21	4.30 a.m. Special ex. Glasgow, 4 minutes at Troon by hose-pipe on No. 40 compo. bursting.	
		Sept. 2	10.0 a.m. ex. Ayr, 2 minutes at Dalgarven by coupling nut under air-valve chest slacking back engine No. 28.	
		„ 12	11.15 a.m. ex. Glasgow, 6 minutes between Cardonald and Paisley owing to lapping blowing out of air pipe coupling-nut under footplate of engine No. 158.	
		„ 15	8.30 a.m. ex. Ayr, 2 minutes at Irvine owing to piston ring of pump breaking, engine No. 82.	
		„ 18	1.20 p.m. ex. Glasgow, 8 minutes at Lochwinnoch by hose-pipe bursting on N.B. carriage No. 653.	
		„ 20	8.30 a.m. ex. Glasgow, 3 minutes at Shields Road by copper pipe in connection with triple valve breaking, engine No. 125.	
		„ 26	5.45 p.m. ex. Girvan, 2 minutes at Prestwick by stoppage of pump, engine No. 186.	
		„ 30	7.30 p.m. ex. Dumfries, 9 minutes at Racks by brake binding on N.B. third No. 1217.	
		Oct. 4	4.15 p.m. ex. Stranraer, 2 minutes at Shields Road by brake binding on first-class No. 160.	
		„ 9	10.7 a.m. ex. Girvan, 2 minutes between Barrhill and Glenwhilly by brake binding on horse-box No. 64.	
		Nov. 3	4.5 p.m. ex. Glasgow, 2 minutes at Stockwell Junction by brake binding on B. compo. No. 25.	
		„ 7	2.35 p.m. ex. Dumfries, 2 minutes at Newton Stewart by hose-pipe bursting between engine and tender No. 157.	
		„ 13	10.15 a.m. ex. Greenock, 3 minutes on journey by brake binding on third-class No. 39.	
	Vacuum Automatic Brake. (98 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	1,130,807 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		July 5	7.25 a.m. ex. Barrhead, 3 minutes between Pollokshaws and Crossmyloof by brake binding on train. Cause not ascertained.	
		„ 14	9.45 a.m. ex. St. Enoch, 8 minutes on journey by brake binding on No. 182 B. third (brake taken up too tight).	
		„ 14	10.20 a.m. St. Enoch, 12 minutes at Clyde Junction by brake binding on No. 182 B. third (brake taken up too tight).	
		„ 18	2.0 p.m. ex. Carlisle, 6 minutes at Carlisle by a defective hose-pipe washer on N.E. H. box No. 310.	
		„ 18	3.15 p.m. ex. Greenock, 8 minutes at Kilmalcolm, by a defective hose-pipe washer on H. box No. 33.	

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Glasgow and South-Western—*cont.*	Vacuum Automatic Brake—*cont.*	July 20	8.10 p.m. ex. Glasgow, 8 minutes at Carlisle by the ejector valves of engine No. 65 having gagged.	
		„ 22	8.28 a.m. ex. Kilmarnock, 6 minutes at Lugton, by brake binding on third-class No. 270 (rubber rolling ring over top of piston).	
		Aug. 15	4.21 p.m. ex. St. Enoch, 4 minutes at Irvine by brake binding on slip portion of train.	
		Sept. 7	3.32 a.m. ex. Carlisle, 6 minutes on journey by brake binding, due to defect on exhaust pipe of ejector, engine No. 18.	
		„ 9	7.35 a.m. ex. Largs, 18 minutes on journey by a small hole in the flexible branch pipe, between cylinder and train-pipe, Engine No. 140.	
		„ 18	4.20 p.m. ex. Glasgow, 3 minutes on journey by brake binding on engine No. 73 (packing of piston-rod leaking).	
		Oct. 3	7.0 a.m. ex. Newmilns, 3 minutes at Galston by brake binding on train (piston having too much travel).	
		Nov. 21	10.27 ex. Glasgow, 20 minutes at Glasgow by brake binding (rolling-ring on tender of engine No. 254 defective).	
		Dec. 1	4.25 p.m. ex. Glasgow, 3 minutes at Main Street by brake binding on engine No. 254, piston sticking (frozen).	
		„ 2	6.25 p.m. ex. Glasgow, 2 minutes on journey by the india-rubber washer of hose-pipe on No. 74 B. third coming off.	
		„ 9	4.45 a.m. Carlisle, 8 minutes between Garrochburn and Woodhead by brake binding on train. Cause not ascertained.	
		„ 23	3.32 a.m. ex. Carlisle, 6 minutes at Dumfries by brake binding (valve in guard's van getting unseated).	
		„ 29	8.0 a.m. ex. Ayr, 2 minutes at Shields Road by brake binding on first-class bogie-carriage No. 169. (Brake taken up too tight.)	
Great North of Scotland	Westinghouse Automatic Brake. (90 engines fitted. *See* Return No.1.)		1 and 2. Nil.	463,048½ miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Aug. 5	4.20 p.m. train from Keith to Aberdeen, stopped between Kinaldie and Pitmedden, owing to branch-pipe on third-class carriage No. 137 bursting. 6 minutes detention to train.	
		„ 10	7.15 p.m. train from Ballater to Aberdeen, stopped between Dess and Lumphanan owing to india-rubber washer off hose-pipe on third-class carriage No. 109 leaking. 3 minutes detention to train.	
		Oct. 14	9.40 a.m. train from Aberdeen to Keith, detained 4 minutes at Kittybrewster owing to triple valve of third-class carriage No. 162 leaking.	
		Nov. 17	1.0 p.m. train from Peterhead to Aberdeen, stopped between Arnage and Ellon owing to hose-pipe on fish-truck No. 2402 bursting. 3 minutes detention to train.	

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Highland - -	Automatic Vacuum Brake. (93 engines fitted. *See* Return No. 1).		1 and 2. Nil.	463,209 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Aug. 12	The 12.40 p.m. up train was delayed 8 minutes at Culloden, where driver could not get sufficient vacuum and trouble caused all the way to Forres, owing to something being wrong with neck ring in guard's van.	
		,, 18	The 8.45 a.m. up train was detained 10 minutes at Dingwall, owing to vacuum brake cylinder of No. 131 H.R. carriage not working properly. Examined and found piston rod badly bent.	
		,, 18	The 11.25 a.m. down train lost 18 minutes running between Inverness and Lairg in consequence of brake not working properly. Driver could not assign any cause.	
		,, 20	The 12.40 a.m. down train. Brake not working properly down to Blair. Five minutes were lost in finding out the fault, when a piece of waste was found in pipes of No. 1 parcel van.	
		,, 23	The engine of 8.45 a.m. up train could not get sufficient vacuum. Train had to be worked with hand brake from Tain to Inverness. Examined brake, and found a piece of waste in small ejector of engine.	
		Oct. 12	The 11.25 a.m. down train was detained at Bilbster, owing to the piston rod of brake cylinder in guard's van having worked too far out of line with slot-bar; put right and resumed journey.	
	Newall's Continuous Hand Brake.	No failures reported.	——	33,608 miles.
North British - -	Westinghouse Automatic Air Brake. (277 engines fitted. *See* Return No. 1.).		1 and 2. Nil.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	1,844 miles.
		July 4	Passenger train, Glasgow to Dundee, detained 3 minutes between Dalmeny and Dundee by Westinghouse pump failing on engine No. 594. Failure of machinery.	4,052,780 miles.
		,, 5	Passenger train, Edinburgh to Carlisle, detained 5 minutes at Eskbank by hose-pipe bursting on Midland Scotch Joint Stock composite carriage No. 13. Failure of material.	
		,, 5	Passenger train, Edinburgh to Aberdeen, detained 5 minutes between Montrose and Hillside by Westinghouse pump failing on engine No. 597. Failure of machinery.	
		,, 6	Passenger train, Glasgow to Edinburgh, detained 5 minutes at Gartshore by hose-pipe bursting on composite carriage No. 69. Failure of material.	
		,, 7	Passenger train, Carlisle to Edinburgh, detained 3 minutes at Riccarton by Westinghouse pump failing on engine No. 596. Failure of machinery.	
		,, 8	Passenger train, Aberdeen to Edinburgh, detained 4 minutes between Craigo and Kinnaber Junction by hose-pipe coming off between engine and tender No. 354. Failure of workmanship.	

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North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	July 11	Passenger train, Aberdeen to Edinburgh, detained 5 minutes at Aberdeen by branch pipe breaking on horse-box No. 50. Failure of material.	
		„ 13	Passenger train, Perth to Edinburgh, detained 9 minutes at Perth by Westinghouse pump failing on engine No. 427. Failure of machinery.	
		„ 17	Passenger train, Bridgeton Cross to Balloch, detained 4 minutes near Kilbowie by Westinghouse pump failing on engine No. 595. Failure of machinery.	
		„ 17	Passenger train, Slamannan to Dundee, detained 7 minutes at Falkland Road by hose-pipe bursting between tender and engine No. 380. Failure of material.	
		„ 18	Passenger train, Hyndland to Hamilton, detained 3 minutes at Charing Cross by Westinghouse pump failing on engine No. 157. Failure of machinery.	
		„ 19	Passenger train, Carlisle to Edinburgh, detained 6 minutes at Ravenswood Junction by hose-pipe bursting on Midland Railway composite carriage No. 691. Failure of material.	
		„ 20	Passenger train, Edinburgh to Glasgow, detained 5 minutes at Dullatur by air-pipe breaking on engine No. 349. Failure of material.	
		„ 20	Passenger train, Perth to Glasgow, detained 5 minutes at Garngaber by air-pipe breaking on engine No. 602. Failure of material.	
		„ 20	Passenger train, Aberdeen to Edinburgh, detained 16 minutes at Stonehaven by hose-pipe bursting on van No. 32,594. Failure of material.	
		„ 22	Passenger train, Edinburgh to Hawick, detained 5 minutes between Belses and Hassendean by hose-pipe bursting on Midland Railway composite carriage No. 53. Failure of material.	
		„ 24	Passenger train, Musselburgh to Edinburgh, detained 4 minutes between Newhailes and Joppa by hose-pipe bursting between air-valve and governor on engine No. 76. Failure of material.	
		„ 29	Passenger train, Edinburgh to Glasgow, detained 3 minutes near Broxburn Junction by branch air pipe breaking on engine No. 217. Failure of material.	
		„ 30	Passenger train, Edinburgh to Carlisle, detained 4 minutes at Edinburgh by air pump governor spring breaking on engine No. 641. Failure of machinery.	
		Aug. 1	Passenger train, Helensburgh to Bridgeton Cross detained 6 minutes at Garscadden by hose-pipe bursting between tender and engine No. 381. Failure of material.	
		„ 2	Passenger train, Helensburgh to Bridgeton Cross, detained 3 minutes at Gallowgate (Central) by hose-pipe bursting between tender and engine No. 245. Failure of material.	
		„ 2	Passenger train, Hyndland to Edinburgh, detained 4 minutes at Carntyne by triple-valve branch pipe breaking on engine No. 393. Failure of material.	
		„ 2	Passenger train, Aberdeen to Edinburgh, detained 3 minutes at Broughty Ferry by air-pipe breaking on engine No. 37. Failure of material.	

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North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	Aug. 2	Passenger train, Carlisle to Edinburgh, detained 3 minutes between Hassendean and Belses by air-pipe breaking on tender No. 639. Failure of material.	
		,, 4	Passenger train, Edinburgh to Carlisle, detained 8 minutes between Newcastleton and Galashiels by air-pipe breaking on engine No. 641. Failure of material.	
		,, 4	Passenger train, Edinburgh to Aberdeen, detained 4 minutes at Dalmeny Junction by hose-pipe bursting on Midland Scotch Joint Stock composite carriage No. 19. Failure of material.	
		,, 12	Passenger train, Craigendoran to Bridgeton Cross, detained 4 minutes on journey by Westinghouse pump failing on engine No. 495. Failure of machinery.	
		,, 13	Passenger train, Aberdeen to Edinburgh, detained 2 minutes between Muchalls and Stonehaven byhose-pipe bursting on Midland Scotch Joint Stock composite carriage No. 1. Failure of material.	
		,, 14	Passenger train, Bridgeton Cross to Balloch, detained 8 minutes at Bridgeton Cross by Westinghouse pump failing on engine No. 327. Failure of machinery.	
		,, 15	Passenger train, Aberdeen to Edinburgh, detained 3 minutes at Inverkeithing Tunnel by hose-pipe becoming uncoupled between engines Nos. 487 and 233. Cause not ascertained.	
		,, 16	Passenger train, Edinburgh to Glasgow, detained 4 minutes at Garngaber by hose-pipe bursting between tender and engine No. 218. Failure of material.	
		,, 17	Passenger train, Carlisle to Silloth, detained 17 minutes at Port Carlisle by Westinghouse pump failing on engine No. 493. Failure of machinery.	
		,, 18	Passenger train, Carlisle to Edinburgh, detained 3 minutes at Fountainhall by hose-pipe bursting on Midland Railway composite carriage No. 166. Failure of material.	
		,, 19	Passenger train, Edinburgh to Aberdeen, detained 3 minutes at Cupar by Westinghouse pump failing on engine No. 638. Failure of machinery.	
		,, 25	Passenger train, Perth to Edinburgh, detained 5 minutes at Perth by hose-pipe bursting on Highland Railway horse-box No. 19. Failure of material.	
		,, 30	Passenger train, Edinburgh to Hyndland, detained 12 minutes on journey by Westinghouse pump failing on engine No. 164. Failure of machinery.	
		,, 30	Passenger train, Edinburgh to Hyndland, detained 5 minutes at Edinburgh by Westinghouse pump failing on engine No. 419. Failure of machinery.	
		Sept. 1	Passenger train, Carlisle to Edinburgh, detained 4 minutes at St. Boswells by hose-pipe bursting on brake-van No. 75. Failure of material.	
		,, 2	Passenger train, Edinburgh to Carlisle, detained 3 minutes at Gorebridge by hose-pipe bursting on Midland Scotch Joint Stock brake-van No. 9. Failure of material.	
		,, 6	Passenger train, Stirling to Aberfoyle, detained 3 minutes between Port of Monteith and Bucklyvie by hose-pipe bursting on third-class brake-carriage No. 664. Failure of material.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	Sept. 7	Passenger train, Galashiels to Edinburgh, detained 8 minutes at Galashiels by Westinghouse pump failing on engine No. 384. Failure of machinery.	
		,, 9	Passenger train, Hawick to Edinburgh detained 6 minutes near Stow by hose-pipe bursting between engine and tender No. 330. Failure of material.	
		,, 9	Passenger train, Aberdeen to Edinburgh, detained 6 minutes at Montrose by air pipe breaking on engine No. 638. Failure of material.	
		,, 9	Passenger train, Bridgeton Cross to Helensburgh, detained 6 minutes at Gallowgate Central by hose pipe bursting on first-class carriage No. 388. Failure of material.	
		,, 13	Passenger train, Edinburgh to Hyndland, detained 14 minutes at Edinburgh by Westinghouse pump failing on engine No. 164. Failure of machinery.	
		,, 14	Passenger train, Hawick to Edinburgh, detained 14 minutes at Stow by hose pipe bursting on Midland Railway meat-van No. 62. Failure of material.	
		,, 15	Passenger train, Bridgeton Cross to Helensburgh, detained 5 minutes at Dalreoch by air-pipe becoming disconnected belween tender and engine No. 168. Cause not ascertained.	
		,, 15	Passenger train, Edinburgh to Helensburgh, detained 13 minutes at Edinburgh by Westinghouse valve spring breaking on engine No. 264. Failure of machinery.	
		,, 16	Passenger train, Helensburgh to Bridgeton Cross, detained 3 minutes at Kelvinhaugh by air pipe becoming disconnected between tender and engine No. 168. Cause not ascertained.	
		,, 18	Passenger train, Perth to Edinburgh, detained 4 minutes at Dunfermline by hose-pipe bursting on Midland Railway carriage No. 43. Failure of material.	
		,, 18	Passenger train, Hamilton to Hyndland, detained 3 minutes at Queen Street by air pipe becoming disconnected between tender and engine No. 553. Cause not ascertained.	
		,, 18	Passenger train, Edinburgh to Aberdeen, detained 3 minutes at Broughty Ferry by Westinghouse triple valve failing on engine No. 37. Failure of machinery.	
		,, 25	Passenger train, Edinburgh to Aberdeen, detained 27 minutes between Haymarket West and Dundee by main air pipe breaking on engine No. 37. Failure of material.	
		,, 27	Passenger train, Balloch to Balfron, detained 5 minutes at Drymen by hose-pipe bursting on composite carriage No. 247. Failure of material.	
		,, 30	Passenger train, Hyndland to Airdrie, detained 10 minutes at Parkhead by Westinghouse pipe failing on engine No. 157. Failure of machinery.	
		Oct. 3	Passenger train, Stirling to Thornton, detained 2 minutes at Cardenden through governor air pipe breaking on engine No. 383. Failure of material.	
		,, 5	Passenger train, Thornton to Dunfermline, detained 10 minutes on journey by brake cylinder failing on van No. 152. Failure of material.	

1. Name of Railway Company.	2. Name or Description of brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	Oct. 7	Passenger train, Perth to Edinburgh, detained 7 minutes at Perth through air-pipe leaking on East Coast Joint Stock third-class brake carriage No. 77. Failure of material.	
		,, 9	Passenger train, Berwick to Edinburgh, detained 3 minutes between Drem and Longniddry by hose-pipe bursting between tender and engine No. 475. Failure of material.	
		,, 12	Passenger train, Aberdeen to Edinburgh, detained 7 minutes at Montrose by hose-pipe bursting on van No. 21,017. Failure of material.	
		,, 21	Passenger train, Edinburgh to Glasgow, detained 8 minutes between Winchburgh and Philpstoun through main air pipe failing on tender of engine No. 602. Failure of material.	
		,, 23	Passenger train, Edinburgh to Perth, detained 8 minutes at Kelty by Westinghouse pump failing on engine No. 491. Failure of machinery.	
		,, 24	Passenger train, Edinburgh to Glasgow, detained 3 minutes at Reading by triple-valve pipe failing on engine No. 350. Failure of material.	
		,, 25	Passenger train, Edinburgh to Glasgow, detained 4 minutes between Winchburgh Junction and Philpstoun by hose-pipe bursting on Caledonian Railway third-class carriage No. 339. Failure of material.	
		,, 26	Passenger train, Edinburgh to Aberdeen, detained 3 minutes at Saughton by branch air pipe failing on engine No. 638. Failure of material.	
		,, 28	Passenger train, Bridgeton Cross to Balloch, detained 12 minutes on journey by Westinghouse pump failing on engine No. 237. Failure of machinery.	
		,, 30	Passenger train, Edinburgh to Aberdeen, detained 3 minutes at Newmill by main air pipe failing on engine No. 638. Failure of material.	
		Nov. 1	Passenger train, Edinburgh to Hawick, detained 3 minutes between Niddrie and Millerhill by Westinghouse pump failing on engine No. 331. Failure of machinery.	
		,, 3	Passenger train, Edinburgh to Aberdeen, detained 10 minutes near Leuchars by branch air-pipe failing on engine No. 638. Failure of material.	
		,, 8	Passenger train, Stirling to Edinburgh, detained 4 minutes at Alloa by hose-pipe bursting on horse-box No. 30. Failure of material.	
		,, 11	Passenger train, Edinburgh to Carlisle, detained 3 minutes at Stobs by hose-pipe bursting on Midland Scotch Joint Stock bogie carriage No. 37. Failure of material.	
		,, 11	Passenger train, Edinburgh to Carlisle, detained 4 minutes near Steele Road by air pump between pump and reservoir failing on engine No. 641. Failure of material.	
		,, 14	Passenger train, Stirling to Dunfermline Lower, detained 3 minutes at Whitemyre by air pipe below pump failing on engine No. 323. Failure of material.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	Nov. 16	Passenger train, Edinburgh to Aberdeen, detained 23 minutes at Dundee by Westinghouse pump failing on engine No. 36. Failure of machinery.	
		,, 21	Passenger train, Glasgow to Edinburgh, detained 5 minutes at Cowlairs West by air pipe becoming disconnected between engines Nos. 217 and 350. Cause not ascertained.	
		,, 25	Passenger train, Bellgrove to Kilbowie, detained 4 minutes between Knightswood South and North Junctions by hose-pipe bursting on third-class carriage No. 584. Failure of material.	
		,, 25	Passenger train, Carlisle to Edinburgh, detained 3 minutes at Newcastleton by air pipe leaking on Midland Railway composite carriage No. 78. Failure of material.	
		,, 29	Passenger train, Edinburgh to Dundee, detained 4 minutes at Burntisland by hose-pipe bursting on Great Northern Railway horse-box No. 19,556. Failure of material.	
		Dec. 5	Passenger train, Berwick to St. Boswells, detained 11 minutes at Berwick by Westinghouse pump failing on engine No. 325. Failure of machinery.	
		,, 9	Passenger train, Balloch to Bridgeton Cross, detained 9 minutes at Balloch by Westinghouse pump failing on engine No. 327. Failure of machinery.	
		,, 13	Passenger train, Edinburgh to Aberdeen, detained 5 minutes on journey by Westinghouse piston connecting rod jamming against brake guide of tender No. 487. Cause not ascertained.	
		,, 15	Passenger train, Aberdeen to Edinburgh, detained 3 minutes at Carolina Port Dundee East by air pipe breaking on engine No. 642. Failure of material.	
		,, 18	Passenger train, Hamilton to Hyndland, detained 10 minutes on journey by Westinghouse pump failing on engine No. 480. Failure of machinery.	
		,, 18	Passenger train, Perth to Edinburgh, detained 7 minutes at Perth by hose-pipe bursting on horse-box No. 117. Failure of material.	
		,, 23	Passenger train, Maryhill to Maryhill, detained 8 minutes at Maryhill by Westinghouse pump failing on engine No. 147. Failure of machinery.	
		,, 27	Passenger train, Hamilton to Hyndland, detained 4 minutes at Parkhead by Westinghouse pump failing on engine No. 157. Failure of machinery.	
		,, 28	Passenger train, Hyndland to Hamilton, detained 6 minutes between Partick and Yorkhill by hose-pipe bursting between tender and engine No. 376. Failure of material.	
		No failures reported.	—	Vacuum Automatic Brake 1,844 miles.
Portpatrick and Wigtownshire,	- - -	No failures reported.	—	Vacuum Automatic. 27,695 miles.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
IRELAND.				
Belfast and County Down.	- - -	No failures reported.	—	Vacuum Automatic Brake. 252,718 miles.
Belfast and Northern Counties.	Vacuum Automatic Brake. 62 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	487,633 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Aug. 20	Eleven minutes delay to 6.30 a.m. down train between Ballymena and Cullybacky, owing to flexible tube under No. 11 engine footplate collapsing, caused by wire on inside having rusted.	
Castlederg and Victoria Bridge Tramway Company.	- - -	No failures nor instance of delay reported.	—	Westinghouse Automatic Brake. 10,608 miles.
Cavan, Leitrim, and Roscommon Light Railway and Tramway Company, Limited.	- - -	No failures reported.	—	Automatic Vacuum Brake. 49,099 miles.
Clogher Valley -	- - -	No failures reported.	—	Automatic Vacuum Brake. 48,704 miles.
Cork and Macroom Direct.	Vacuum Automatic.		1. and 2. Nil.	36,151 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Sept. 13	2 p.m. down. 10 minutes lost at Crookstown. Drawbar and chains of No. 7 third broken by sudden application of brake while backing on to siding with waggons attached.	
		Nov. 3	9 a.m. down. 5 minutes delay at Coolmaken. Train pipe of engine broken by a cow that was trespassing on the line. Train stopped. Delay caused by the brakes having to be released by hand.	
		Dec. 21	6.45 up. 10 minutes delay in starting from Macroom, the brake block of two carriages frozen on to wheels. The train was standing 30 minutes at station.	
Cork and Muskerry Light (Including Donoughmore Extension Light Railway).	- - -	No failures reported.	—	Automatic Vacuum Brake. 46,752 miles.
Cork, Bandon, and South Coast.	- - -	No failures nor instance of delay reported.	—	Automatic Vacuum Brake. 108,672¼ miles.
Cork, Blackrock, and Passage.	- - -	No failures reported.	—	Automatic Vacuum 37,896 miles.
Donegal - -	- - -	No failures reported.	—	Automatic Vacuum 30,242 miles.
Dublin, Wicklow, and Wexford.	- - -	No failures reported.	—	Automatic Vacuum Brake. 484,982 miles.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Dundalk, Newry, and Greenore.	- - -	No failures reported.	——	Automatic Vacuum Brake. Passenger trains, 20,898 Mixed trains, 9.037¾ Total 29,935¾
Great Northern (Ireland).	- - -	No failures reported.	——	Automatic Vacuum Brake. 1,074,224 miles.
Great Southern and Western Railway, Ireland.	Automatic Vacuum Brake. (107 engines fitted. *See* Return No.1.)		1 and 2 Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	Automatic Vacuum 1,120,331.
		Aug. 26	The 5.30 p.m. ex. Limerick was delayed 16 minutes owing to sack rod under tender breaking.	
		,, 28	The 8.30 p.m. ex. Charleville was delayed 10 minutes owing to sack rod of tender breaking.	
		Sept. 27	The 2.0 p.m. ex. Kenmare was delayed 7 minutes owing to sleeve of sack under loco. 39 slipping.	
Londonderry and Lough Swilly.	- - -	No failures reported.	——	Automatic Vacuum 19,171½ miles.
Midland Great Western Railway of Ireland.	Automatic Vacuum Brake. (57 engines fitted. *See* Return No.1.)		1 and 2 Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	672,709 miles.
		Aug. 12	Brake blocks became applied to wheels of No. 92 third-class carriage up night mail. Delay 24 minutes. Cause not known. Put right on spot.	
		Nov. 2	Brake pistons stuck in cylinder of engine No. 9. No delay.	
Sligo, Leitrim, and Northern Counties.	- - -	No failures reported.	——	Smith's Vacuum Brake. 15,054 miles.
Tralee and Dingle -	- - -	No failures nor instance of delay.	——	Automatic Vacuum Brake. 29,546 miles.
Waterford and Central Ireland.	- - -	No failures reported.	——	Automatic Vacuum 21,814 miles.
Waterford and Limerick	- - -	No failures reported.	——	Automatic Vacuum Brake. 286,174¼ miles.
West Carbery -	- - -	No failures reported.	——	Automatic Vacuum Brake. 732 miles.
West Clare - -	- - -	No failures reported.	——	Automatic Vacuum Brake. 65,371 miles.

No. 3.

RETURN for the Six Months ending on the 31st day of December 1893, of the number of miles run by Passenger Trains not fitted with CONTINUOUS BRAKES on Railways.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
ENGLAND AND WALES.		
Barry	Barry	—
Bishop's Castle	Bishop's Castle	10,437
Brecon and Merthyr Tydfil Junction	Nil.	—
Cambrian	Cambrian and Mid Wales Railways	Passenger trains 103,865 Mixed trains 73,588 Total 177,453
Cheshire Lines Committee	Cheshire Lines	40†
Colne Valley and Halstead	Colne Valley and Halstead	—
Corris	Corris	1,090
East and West Junction	Nil.	—
Festiniog	Nil.	—
Furness	Nil.	—
Garstang and Knot End	Garstang and Knot End	9,368
Golden Valley	Golden Valley	5,890
Great Eastern	Great Eastern, Great Northern and Great Eastern Joint, Midland and Great Eastern.	15,642
Great Northern	Great Northern	1,440
Great Western	*Main and Branch lines and lines worked by the Great Western Railway Company.	1,335
Hull, Barnsley, and West Riding Junction Railway and Dock.	Hull, Barnsley, and West Riding Junction	—
Isle of Wight	Nil.	—
Isle of Wight Central	Isle of Wight Central and Freshwater, Yarmouth, and Newport.	19,132

* The trains were fitted with continuous brakes, but owing to failures at various times, and on various sections of the line, trains were worked by hand brake for the total distance shown above.

† The Company explain that this mileage is due in two cases to failure of engines and in two other cases to accidents, and to engines not being fitted with automatic vacuum brake.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Lancashire and Yorkshire	Nil.	—
Liskeard and Caradon	Nil.	—
London and North-Western	London and North-Western Railway, and lines over which that company's trains run.	—
London and South-Western	London and South-Western Railway and Branches.	93½
London, Brighton, and South Coast	London, Brighton, and South Coast	377
London, Chatham, and Dover	London, Chatham, and Dover, and Dover and Deal.	340
Londonderry (Seaham and Sunderland)	Nil.	—
London, Tilbury, and Southend	Nil.	—
Manchester and Milford	Manchester and Milford	22,250
Manchester, Sheffield, and Lincolnshire.	Manchester, Sheffield, and Lincolnshire Sheffield and Midland Committee Oldham, Ashton, and Guide Bridge Committee. Macclesfield Committee	196
Manchester, South Junction, and Altrincham.	Nil.	—
Maryport and Carlisle	Nil.	—
Mawddwy	Mawddwy	161½
Mersey	Nil.	—
Metropolitan	Metropolitan	43
Metropolitan District	Nil.	—
Midland	Nil.	—
Midland and South-Western Junction	Nil.	—
Neath and Brecon	Nil.	—
North-Eastern	North-Eastern	m. ch. Ordinary - 41 74 Special and Excursion - 130 11 Total - 172 5*
North London	Nil.	—
North Staffordshire	Nil.	—
North Wales Narrow Gauge	North Wales Narrow Gauge	16,693†

* The Company explain that this mileage is due in one case to a brake failure and in the others to the engine not being fitted with vacuum brake.

† The Westinghouse continuous automatic brake is being fitted to the Company's stock, but is not yet in general use. The mileage given is as if no trains were thus fitted.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Pembroke and Tenby	Pembroke and Tenby	5,683¾
Pontypridd, Caerphilly, and Newport	Nil.	—
Ravenglass and Eskdale	Ravenglass and Eskdale	Passenger trains 7,487 Mixed trains 2,625 Total 10,112
Rhondda and Swansea Bay	Nil.	—
Rhymney	Nil.	—
Severn and Wye and Severn Bridge	Nil.	—
Somerset Joint Committee	Somerset and Dorset Joint line	5
South-Eastern	South-Eastern and its Branches	4,504
Southwold	Southwold	16,212
Taff Vale	Nil.	—
Talyllyn	Talyllyn	7,081
West Lancashire	West Lancashire and Liverpool, Southport, and Preston Junction	4,234
West Somerset Mineral	West Somerset Mineral	3,744
Wirral	Nil.	—
Wrexham, Mold, and Connah's Quay	Nil.	—
SCOTLAND.		
Caledonian	Caledonian Callander and Oban Cathcart Kilsyth and Bonnybridge Lanarkshire and Ayrshire	1,254 60 3 16 24 Total 1,357
Glasgow and South-Western	Glasgow and South-Western, and Portpatrick and Wigtownshire Railways.	287*
Great North of Scotland	Great North of Scotland	Passenger trains 80,622½ Mixed trains 131,764 Total 212,386½

* Through failure of brakes on journeys.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Highland - - -	Highland - - - - -	Mixed trains 252,209
North British - - -	Nil.	—
Portpatrick and Wigtownshire Joint Committee.	Nil.	—
IRELAND.		
Ballycastle - - - -	Ballycastle - - - - - -	19,383
Belfast and County Down - -	Nil.	—
Belfast and Northern Counties -	Belfast and Northern Counties, Derry Central, Draperstown, Limavady and Dungiven.	Mixed trains 21,138
Bessbrook and Newry - -	Bessbrook and Newry Tramway - -	8,712
Castlederg and Victoria Bridge -	Nil.	—
Cavan, Leitrim, and Roscommon Light Railway and Tramway.	Nil.	—
Clogher Valley Tramway - -	Nil.	—
Cork and Macroom Direct -	Nil.	—
Cork and Muskerry Light - -	Nil.	—
Cork, Bandon, and South Coast -	Cork, Bandon, and South Coast - -	2,518¾
	Ilen Valley - - - - -	200
	Bantry Extension - - -	163
	Clonakilty Extension - - -	336½
	West Cork - - - - -	658¾
	Kinsale - - - -	113¼
	Baltimore Extension - - -	31
	Total -	4,021¼
Cork, Blackrock, and Passage -	Nil.	—
Donegal - - - -	Donegal - - - - - -	Section I. - 7,774
		„ II. - 14,879
		Total - 22,653
Dublin, Wicklow, and Wexford -	Nil.	—
Dundalk, Newry, and Greenore -	Nil.	—
Great Northern (Ireland) - -	Nil.	—
Great Southern and Western -	Nil.	—
Londonderry and Lough Swilly -	Nil.	—
Midland Great Western - -	Nil.	—
Sligo, Leitrim, and Northern Counties	Sligo, Leitrim, and Northern Counties -	Mixed trains 36,152

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Tralee and Dingle - - -	Nil.	—
Waterford and Central Ireland -	Waterford and Central Ireland, Kilkenny Junction and Central Ireland.	51,646
Waterford and Limerick - -	Limerick and Kerry - - - Athenry and Ennis - - - Athenry and Tuam - - - - Southern - - - - - Rathkeale and Newcastle Junction - - Tralee and Fenit - - - -	65,647
Waterford and Tramore - -	Waterford and Tramore - - -	21,960
Waterford, Dungarvan, and Lismore	Waterford, Dungarvan, and Lismore - - Fermoy and Lismore - - - -	50,588¾
West Carbery - - -	Nil.	—
West Clare - - - -	Nil.	—

APPENDIX.

London, Brighton, and South Coast Railway.

Statement of Cases in which Accidents have been Prevented by the use of the Westinghouse Continuous Automatic Air Brake during the six months ending the 31st December 1893.

Date.	Train.	Particulars.
1893.		
July 8	10.40 a.m. Streatham Hill to Victoria.	On passing Balham the driver saw one of Messrs. Firbank's (contractors) men on the line. He sounded his whistle and applied the brake, by which means he was enabled to stop the train within a yard of the man, who, it appears, did not hear the whistle or train.
August 17	5.20 p.m. Three Bridges to Ford Jn.	When running between Billingshurst and Pulborough there were a lot of sheep on the line, and had it not been for the application of the brake bringing the train to a stop quickly, they would have been killed.
„ 17	4.40 p.m. Portsmouth to London.	When approaching Adversane crossing (between Pulborough and Billingshurst) the driver was signalled by the gatekeeper to stop on account of a flock of sheep being on the line, which he accordingly did by applying the brake, and by which means he was enabled to bring his train to a stand before running over any of the sheep.
Sept. 22	6.18 p.m. Brighton to Hastings.	When running into Glynde station a trolly loaded with milk cans ran off the platform on to the line in front of the train. The driver at once applied the brake, by which means he states he was able to pull up within 15 yards of the trolly.
October 12	10.33 a.m. Victoria to Bognor.	When running between Horsham and Stammerham Junction, the driver observed a pack of hounds on the line. He immediately applied the brake, by which means he was able to stop the train before running into them. He further states that if it had not been for the continuous brake he would have been unable to stop in time.
Nov. 2	8.43 a.m. East Dulwich to London Bridge.	When running into London Bridge terminus the signals were "off" for the train to enter No. 4 platform, but it appears the points were set for No. 1 road. By means of the brake, however, the driver was enabled to stop his train about nine engine lengths from another engine which was standing on that road and thus avoided a collision.

London, Brighton, and South Coast Railway.

Statement showing the Number of Times the Westinghouse Continuous Automatic Air Brake has been used on this railway on two particular days during the six months ending 31st December 1893.

Wednesday, October 11th.

With passenger trains and empty carriages	16,164
With empty engines only	9,602
Total	25,766
Number of booked stoppages	9,639

The weather was very wet.

Friday, December 8th.

With passenger trains and empty carriages	15,187
With empty engines only	9,559
Total	24,746
Number of booked stoppages	9,513

The weather was dull and wet.

2.—Rules and Regulations relating to Continuous Brakes.

CAMBRIAN RAILWAY.

Circular No. 206.

Instructions for Working the Vacuum Brake.

1. Certain of the carriages and vans at present working between Whitchurch and Aberystwith, and to a limited extent on other parts of the line also, are fitted with a Non-automatic Vacuum Brake, *under the control of the engine-driver only*. These vans are also fitted with an automatic arrangement, held off by a small vacuum to be constantly maintained in the train pipe when the engine has been coupled up. Should this vacuum not be maintained, the valve in the van will drop, the bell ring, and the van brake be instantly applied. The carriage examiners will be responsible for winding up the bell when the train is marshalled, and the guard for seeing it kept wound up on the journey.

2. The brake will eventually be fitted to all the Company's stock, but until then, some of the carriages will be fitted with train pipes only, and when it is necessary to run such carriages in Vacuum Brake trains, they must as far as possible be placed *behind carriages fitted with the brake and before the rear van.*

3. The person whose duty it is to couple up the brake pipes previous to the starting of a train, must as soon as the connexions are complete inform the driver, who will then raise the vacuum, by the use of the ejector. Porters and others are cautioned that in passing between vehicles they must not step upon the brake pipes.

4. Before giving the signal for the train to start, the guard must satisfy himself that the valve in his van has been raised by the vacuum, that the bell has ceased to ring, the small catch dropped out of gear, and that the gauge shows not less than 15 inches of vacuum. Should the gauge not show that amount of vacuum, the guard must hold up steadily the white flag to the driver, waving it when the necessary vacuum is reached. At night the same signals are to be given with a white light.

5. It will be the duty of the guard before starting, and at places where engines are changed, to inform the driver the number of vehicles on the train fitted with the Vacuum Brake complete, as well as the number fitted with the pipe only.

6. The brakes throughout the train being under the control of the driver, the use of the hand brake in the vans is not required for ordinary stops for which the use of the Vacuum Brake is permitted (*see* paragraph 14), but guards must at all times be prepared to apply the hand brake immediately on its being called for by the driver's whistle.

7. If at any time during a journey the Automatic Brake in the van goes on, and the bell rings, the guard must at once endeavour to ascertain the cause, which may arise from the train breaking in two, failure of some part of the brake apparatus, or neglect on the part of the driver to maintain the small vacuum. If the guard is satisfied that the application of the brake has not arisen from the train breaking loose, and can perceive nothing wrong with the train which would require it to be stopped, he must put the Automatic Brake out of gear by pulling up the spindle of the valve, and hooking in the catch, to prevent the brake blocks rubbing the wheels of the van to the next stopping place, where the guard must call the driver's attention to the matter.

8. The guards of all trains fitted with the Vacuum Brake must insert on their reports the words "Continuous Brake Train,' and if only for part of the journey, between what points, with full particulars of any defects which may occur in the working of the brake during the journey, including its automatic action under the circumstances described in paragraph 7.

9. To enable a van to be moved when the engine is detached from the train, the Automatic Brake can be held off by pulling up the spindle of the valve, and hooking in the catch. The valve must be so hooked up on coming to a stand at the end of a journey. The brake pipes of carriages standing in sidings must not be left hanging loose, but fixed to the plug.

10. The *Vacuum* Brake stock of the following Railway Companies may be placed with Cambrian Brake stock in making up Continuous Brake trains, subject to its being dealt with as provided in the second part of par. 12, viz.:—

London and North-Western.
North Stafford.
Great Northern.
Manchester, Sheffield, and Lincolnshire.
Manchester South Junction and Altrincham.
Cheshire Lines.
Caledonian.

The vehicles of any other company fitted with a Vacuum Brake must when possible be placed in the rear of Cambrian Continuous Brake trains, *and the pipes not coupled up*, but if it is absolutely necessary to marshal them in such trains, they are to be placed as far back as possible, the pipes left uncoupled, and the Vacuum Brake used only on the vehicles between them and the engine. If, however, such foreign vehicles are fitted with an apparatus for cutting off the brake cylinder from the train pipe, and the brake has been put out of gear, the pipes may be coupled up. Horse boxes and other vehicles *fitted with train pipes only* may be marshalled *in* the trains and the pipes coupled.

11. When any considerable number of vehicles not fitted with the Vacuum Brake, or having pipes only, are attached to a train fitted with such brake, the guard in the rear van must immediately, upon the Vacuum Brake being applied by the driver, apply his hand brake, and keep it tightly on, either until the train has come to a stand, or the driver has taken off the Vacuum Brake, and is again going forward. This action is necessary to prevent the rebound of the carriages which may occur with trains composed of vehicles only partially fitted with Continuous Brakes.

12. When a Cambrian carriage fitted with the brake is sent forward to the Great Western or Midland lines, the connexion between the train pipe and the brake cylinder must be cut off by means of the handle painted red, placed at each side of the carriage, close under the frame. This handle forms part of a rod extending across the carriage, and provided at each end with three notches. When it is desired to disconnect the brake, either for the purpose of sending the carriage to the lines mentioned, or if, when running, the brake is found defective, the handle must be pulled or pushed into one of the end notches. When right for working, the handle will stand in the centre notch, level with the side of the carriage frame, and examiners must see that the handle is placed in this position when carriages are returned from a foreign line, or after having undergone repairs.

Some of the London and North-Western Company's carriages are now fitted with the *Automatic* Vacuum Brake, and when Cambrian carriages are returned from that Company's line, special care must be taken that the handle is put back to the centre notch. For the same reason the connecting handle on London and North-Western carriages fitted with the Automatic arrangement must be moved to the position marked "Simple" before the carriages are placed in Cambrian Vacuum Brake trains.

13. Enginemen must be careful not to put on the Vacuum Brake too suddenly, and drivers of all down trains must test the brake before commencing the descent of Talerddig incline. Special instructions to enginemen will be issued by the Locomotive Superintendent.

14. The Vacuum Brake is *not to be used except on emergency* at—

(*a*) Terminal stations.
(*b*) Junctions between single and double line.
(*c*) Stations on single line where other trains are to be passed or crossed.
(*d*) *Nor at any station*, unless the driver is satisfied at the time of shutting off steam that there is an obstruction on the line which he could not stop short of by the use of the hand brakes.

Station-masters are to report any breach of this regulation which may come under their notice.

In all the foregoing cases steam must be shut off, and the speed reduced in the same manner as if the train were fitted with the ordinary hand brakes only.

Please acknowledge receipt on form annexed.

J. Conacher,
Secretary.

Oswestry, 15th June 1888.

THE FURNESS RAILWAYS.

Instructions to Engine Drivers, Guards, and Others, as to the use of the Automatic Vacuum Brake.

1. The brake can be applied throughout the train by the driver from the engine, or by the guard from his van, but in order that this may be done it is imperative that the flexible connexions between each carriage and between the engine and the train shall be properly coupled together, and the flexible pipe at the rear end be put carefully on the plug.

2. When the engine is attached to the train, it is the duty of the fireman to connect the hose coupling on the engine to that on the train; and when the engine is disconnected from the train it is the fireman's duty to place the hose coupling on to the plug provided for that purpose. The driver must see that the fireman attends to this.

3. The driver before starting must see that the gauge indicates at least 18 ins. of vacuum. This is done by admitting steam to the small ejector by means of a steam cock provided for that purpose. To apply the brake move the lever on the brake valve to "On." In ordinary running this lever must stand at "Off," or "Running position."

4. If from any cause the driver is unable to obtain at least 15 ins. of vacuum, he must inform the guard of the fact, and together they must work the train to destination with the ordinary hand brakes.

5. After the application of the automatic vacuum brake, and just before coming to a stand at stations or when stopped on the road, the driver must use his ejector so as to partially release the brake, and thus prevent any rebound of the carriages; this will also enable the driver to start his train immediately he receives the signal to do so.

6. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made on their reports. They must at an times be ready to apply the hand brake should the driver whistle for its assistance.

7. When guards have occasion to apply the brake they must press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and at once stops the train by the application of the brake blocks to the tyres of the wheels. This valve opens automatically when the brake is applied with full force by the driver, and ensures very quick action.

8. To release the brake for shunting purposes, the engine having left the train, first see that the hose coupling at one end of the train is off the plug, then pull the cord which is fixed under each carriage as indicated by a red arrow, then air will be admitted to the top side of the cylinder, and the brakes come off by gravity. The release cord must always be held by hand until the brakes come off and must never be fastened.

9. The guard, before giving the signal to start at the commencement of the journey, and at stations where the flexible pipes have been coupled or uncoupled, must inform the driver—1st, That all the vehicles throughout the train fitted with the brake have the flexible pipes properly coupled up, and the flexible pipe at the rear of the last vacuum vehicle is properly placed on the dummy plug; 2nd, that 18 ins. of vacuum is indicated by the gauge in rear van on the train; and the number of vehicles fitted with the vacuum brake, and in the event of their being any vehicles on the train not fitted with the vacuum brake, the guard must inform the driver of the fact, and the number of vehicles not fitted, so that the the driver may know what number of vehicles over which he has control, and what number are without the vacuum brake.

10. When carriages are to be slipped the flexible pipes must be fixed on the dummy plugs on the end of the carriage and the cord pulled to release the brake. The carriage after being slipped must be brought to a stand with the hand brake.

11. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the driver on his report, which must be accompanied by a special report giving full particulars of the irregularity. Should the amount of vacuum be less than 15 ins. on the gauge, the guard must call the driver's attention to the fact and enter the same on his report, stating cause, &c. Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever on the brake valve that is in the guard's van.

12. Vehicles fitted with pipes only, and which have no brake gear fitted to their own wheels, have the pipes on the ends painted red, and must be considered as vehicles without the brake.

13. To work with foreign stock, such as the London and North-Western, the handle painted red on the side of the carriage belonging to that Company must be pulled or put into one of the end notches, or into the position marked "Auto.," unless the brake is defective, when it should be put into the centre or "Cut off" position.

14. Vacuum pipe connections when not in use must be placed securely on the dummy plugs provided for that purpose.

15. To couple the hose pipes the porter must take one in each hand, lift them up sufficiently high to hook the bottom horns of the couplings together first, then by lowering them place the top horns of the couplings in the slots.

16. To uncouple the hose pipes, the porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate. Porters when coupling or uncoupling must have their hands quite free from cotton waste or anything else that would be likely to be drawn into the pipes by the suction of the vacuum.

17. In the formation or marshalling of trains when the whole of the coaches are not fitted with the

automatic vacuum brake, those that are so fitted must be placed together, and next to the engine.

18. Carriage washers must not allow any water to remain on the hose pipes or plugs when washing the vehicles, as any water left upon the pipes and plugs during frost the pipes and plugs would freeze, and cause delay and inconvenience in fixing the pipes on the plugs.

Instructions for Working the Automatic Vacuum Brake.

This brake can be applied throughout the train by the driver from his engine or by the guard from his van.

Drivers' Instructions.—Before starting see that your gauge indicates at least 18 ins. of vacuum. This is done by admitting steam to the small ejector by means of a steam cock placed for that purpose. To apply the brake, move the lever on the combination ejector to "On." In ordinary running the lever must stand at "Running position." To release the brake move the lever to position "Off. *When the vacuum is suddenly destroyed in the main pipe, the brake is full "On."* When separated from your train, see that the hose couplings are placed upon the plugs fixed for that purpose.

Guards' Instructions.—To apply the brake, press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is to be only used in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all the flexible hose-pipes between the carriages, and between the carriages and engine, are properly coupled together, and that the couplings on the end vehicles are placed upon the plugs. See by your gauge that a vacuum of 15 ins. is maintained. Report otherwise to the driver, and mark your report sheets accordingly, with cause, &c.

General Instructions.—To release the brakes for shunting purposes, the engine having left the train, first see that the hose coupling at one end of the train is taken off the plug, then pull the cord which is fixed under the body of each carriage, as shown by the arrows painted red. This admits air to the top side of the cylinder, and the brakes come off by gravity.

By Order.

General Offices, Barrow,
December 13th, 1890.

GREAT NORTHERN RAILWAY.

Vacuum Brakes.

Instructions for working the Vacuum Brake either as a Simple or Automatic Brake when the Carriages, &c. are fitted with the Combination Brake or the Automatic Brake only.

The attention of station masters, foremen, guards, porters and others is drawn to the arrangement under which carriages and other vehicles fitted with the simple or automatic apparatus can be used, either for the application of the simple or automatic brake, the arrangement consisting of a short lever at each end or side of the carriage or other vehicle, having a quadrant with the letters "Auto." at one end, and "Simp." at the other, indicating automatic or simple.

When carriages or other vehicles are attached to an automatic train, the lever must be turned to "Auto.," and when to a simple brake train to "Simp." When the brake is out of order the lever should be set straight up and down, cutting off the brake connections.

To release the brake from any carriage, &c., pull the cord, the position of which is indicated by a red star on each side of the vehicle. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine, or by the guard from his van, but in order that this may be done it is imperative that the flexible connections between each vehicle and between the engine and the train shall be properly coupled together, and the flexible pipe at the rear end be put carefully on the plug.

Special Instructions to Guards.

Guards must see that the gauge in their vans indicates 18 inches of vacuum before starting, and they must at all times be ready to apply the hand brake should the driver call by whistle for its assistance, or when approaching a stopping station.

When carriages are to be slipped the pipes must be put upon the plug, and the cord pulled to release the brake. The carriage, after being slipped, must be brought to a stand with the hand brake.

Special Instructions to Engine Drivers.

Before starting the driver must see that the gauge indicates at least 18 inches of vacuum, and that it be maintained during the journey. The vacuum is created by admitting steam to the small ejector. To release the brake close the application valve, when the brake-blocks will fall from the wheels.

When the automatic vacuum brake is to be used for the ordinary stoppage of trains, it must be done by the engineman opening the application valve on the engine gradually, not suddenly or with full force, except in cases of emergency.

At any station where there is likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the application valve on the engine so that there may be no delay in coupling or uncoupling.

General Instructions.

All passenger trains must be fitted with a continuous brake.

When a train, which ordinarily consists of vehicles fitted with a continuous brake, is not so fitted throughout, the front half, at least, must be fitted and worked with a continuous brake.

The working of these brakes by the engineman will not relieve guards from any responsibility. They must keep a good look-out, and be prepared to apply hand brakes should necessity arise.

Station-masters, inspectors, and foremen must select experienced men to couple together the pipes of vehicles fitted with any air brake, and must carefully examine the couplings before starting train. They must give special attention to the proper coupling of air brake pipes, and make such arrangements as will ensure these pipes being cared for, and not improperly used.

Guards *must see* that pipes of air brakes are properly coupled together *before starting*, and whenever any engine or vehicle is attached or detached; and they must, whenever the train stops at a station, examine the pipes and couplings.

In vehicles fitted with vacuum and also with Westinghouse brake pipes, the latter must, when such is practicable, be above the vacuum pipes.

The communication cord must be attached to lever of brake of engine. The cord must be given by platform porter to engineman or fireman, who must attach it to brake lever.

When vehicles fitted with continuous air brake are left in sidings or at stations, the brake pipes of each vehicle must be coupled together, and not left hanging loose. Porters and others are cautioned that in passing between vehicles *they must not step upon*

the brake pipes, nor interfere with or injure the connections.

Guards must report specially and also enter on their journals full particulars of any defect, failure, or unsatisfactory working of the brake of their train, or any portion of the fittings, couplings, &c., whether vacuum, Westinghouse, hand, or other brake.

The head guard of a train provided with a continuous brake must, before starting train, and at places where engines are changed, inform the engine driver the number of vehicles there are on the train, and upon how many of them the brake can be applied; and when any vehicles are attached or detached on journey, the engine driver must be advised, and told whether the attaching or detaching of such vehicles will interfere with working of brake on whole or a portion of train, and, if the latter, to what extent.

The engine driver of a train provided with a continuous brake must, before starting, and at places where engines are changed, ascertain from the head guard the number of vehicles there are on the train, and upon how many of them the brake can be applied, and, when any vehicles are attached or detached on journey, whether the attaching or detaching of such vehicles will interfere with working of brake, and, if so, to what extent.

Terminal stations must be approached cautiously, and guards must apply their hand brakes, should there be any reason to suppose the engineman has not the train well in hand, or that there is the least risk of not being able to stop at entrance to station. Guards must have their hands on their hand brakes when passing the distant signal of a terminal station, and must so remain and be ready to apply brakes until train is stopped at station.

Enginemen must test the brake before starting, at each station where engine is changed, and again at each station where any vehicle is attached or detached. They must satisfy themselves, before passing the distant-signal of any station at which the train has to stop or reduce speed, that the brake is in good working order, and on passing the distant-signal of any terminal station the brake must be applied and speed of train reduced by it. The train must not be allowed to travel between the distant-signal and any terminal station at a higher rate of speed than will admit of its being stopped at entrance to station by the application of the ordinary hand brakes only. Enginemen must from time to time, and whenever they are likely to have to make use of the brake, test its working, and must not at any time run more than 20 miles without trying the brake. They must not pass the distant-signal of any important station, such as Hatfield, Hitchin, Peterboro', Retford, Doncaster, &c., nor go down any incline, without trying the brake, and must in each case satisfy themselves it is in good working order. Unless the brake is working properly when thus tried, the engineman must whistle for the guards' hand brakes, stop the train, and inform the guards the continuous brake is out of order, and the hand brakes must be relied upon for working the train. Special care must then be taken in approaching stations at which the train has to stop.

The brake must also be tested on—

All up trains when passing Holloway station (London),

All down trains when passing Meadow Lane junction (Nottingham),

All down trains when passing Hammerton Street junction (Bradford),

All down trains when passing the goods yard junction, Dewsbury,

All down trains when passing the junction with Midland Railway, Keighley,

All down trains when passing the down distant-signal of the Midland junction at Shipley.

A chain with hook is attached at each end of the several vehicles composing the coaching stock. This hook must be put round the rod of the screw coupling, immediately above the ball, to prevent the latter touching the brake pipes. Station masters, guards, and others must report any case of the suspended weight of a screw coupling being found above side chain or brake pipe.

Guards must inform enginemen of the number of carriages on their train which are not fitted with brake apparatus, but with through pipes only.

Vacuum brake pipe connections, when not in use, must be securely placed on the studs provided for the purpose.

Circular No. 5887a is cancelled.

P. Stirling,
Locomotive Engineer.
Francis P. Cockshott,
King's Cross, Superintendent of the Line.
31st December, 1887.

GREAT WESTERN RAILWAY.

Description of and Instructions for Working the Continuous Automatic Vacuum Brake, to commence 4th December 1893.

Description.

1. The Automatic Vacuum Brake stops the train by the application of the brake-blocks to the tyres, in the same way as the ordinary screw brake; but the levers which apply the blocks instead of being worked by a screw are worked by a cylinder and piston, actuated by atmospheric pressure.

2. The following are the principal parts of the apparatus on the carriages, the reference letters showing the corresponding parts on the diagrams given below :—*

A, continuous pipe, connected by flexible pipe between the carriages.

B, hollow piston rod, connected by branch pipe to the continuous pipe.

C, piston.

D, cylinder, capable of moving freely up and down on the fixed piston, and connected at the bottom with the brake levers E.

The piston is packed with an india-rubber ring, so arranged that air can pass freely from the bottom of the cylinder to the top, but not from the top to the bottom. The piston-rod is also packed with an india-rubber gland.

3. *Brake off.*—The air is exhausted from the pipes and cylinders, by the ejector on the engine when the train is at rest, or by the air-pump on the engine when the train is in motion. The gauges on the engine and in the guards' compartments indicate the power available for stopping the train, and should show not less than 20 inches nor more than 25 inches of vacuum *when the train is running*. The vacuum being equal on both sides of the piston, the cylinder falls by its own weight and holds the brakes off the wheels. (See Fig. 1.)

4. *Brake on.*—The moment air is admitted into the continuous pipe, whether by the engineman or by the guard, or by the accidental severance of the couplings it rushes through the continuous pipe down the hollow piston-rod into the *upper* part of the cylinder, and pressing the india-rubber packing-ring against the sides of the cylinder, seals the vacuum on the under side of the piston, so that the pressure of air in the upper part of the cylinder, having nothing to balance it on the other side of the piston, thrusts up the cylinder and presses the brake blocks against the wheels. (See Fig. 2)

5. *Release of Brake.*—When the brake has been applied it will remain on, unless released either by the exhaustion of the air from the upper side of the piston (see par. 3) or by the admission of air to the under side of the piston.

For diagram, *see* [C.—8873.]

6. *Release Valves.*—The majority of vehicles are fitted with release valves for releasing the brake by hand, as shown at F on diagram. These valves can be opened by pulling the handle fixed on each side of the vehicles.

7. *Brake Setters.*—In order to apply the brakes on each carriage in the train as nearly as possible at the same moment, it is necessary to admit the air to the continuous pipe in more than one place. For this purpose a valve or brake setter is provided in each guard's compartment, so constructed that any sudden increase of pressure in the pipe instantly causes the valve to open automatically and admit a supply of air, after which it closes again by its own weight. By lifting the handle attached to the brake setter the guard can on an emergency apply the brakes on the entire train.

Formation of Passenger Trains.

8. *Vehicles to which Brake must be applicable.*—The Board of Trade Regulations with regard to continuous brakes on passenger trains require that the brake must be capable of being applied by both engineman and guard to every vehicle in the train, whether carrying passengers or not, subject to certain exceptions; but in order that this may be done, it is imperative that the flexible connections between each carriage, and between the engine and the train, be properly coupled up.

9. *Proportion of Vehicles which may be run unbraked.*—The exceptions referred to admit of a proportion of vehicles being run unbraked, provided they are fitted with continuous vacuum pipes. This proportion is one in four (*i.e.*, one unbraked to three braked vehicles) in every passenger train running a distance of 10 miles or under without a stop, and one in six (*i.e.*, one unbraked to five braked vehicles) if the train runs more than 10 miles without a stop.

10. *Piped Vehicles in front, unpiped Vehicles behind.*—In the formation of trains, vehicles fitted with the automatic vacuum brake, and those with the connecting pipe only, must be placed all together, and no vehicles unprovided with a connecting pipe must be placed between them and the engine; in other words those vehicles without pipes must all be placed behind those provided with pipes.

11. *Method of calculating weight on Train.*—The method of calculating the total number of vehicles upon a train, so as to determine how many of them are allowed to be run unbraked, is as under:—

Engine - -	to be counted as	2	vehicles
Tender -	„	1	„
Tank engine -	„	2	„
Eight-wheeled carriage -	„	2	„
Six - -	„	1	„
Four - -	„	1	„
Horse-box, carriage truck, fish van, or other four-wheeled vehicle not carrying passengers - -	„	½	„

12. *One unpiped Vehicle may go behind Brake Van.*—The last vehicle must be fitted with the vacuum brake, excepting in the cases where, to avoid delay, it may be necessary to attach *one* unbraked vehicle, such as a cattle truck or a truck of fish, &c., behind the rear brake-van. This last occasional unbraked vehicle is not required to be furnished with a pipe, but it must be considered as included in and *not in addition to* the authorised proportion of unbraked vehicles, and must never carry passengers unless they are men in charge of horses or other live stock, and must always be secured to the train by the screw coupling of the rear brake-van.

13. *One unbraked Truck with a pipe may run in front of rear Brake on Passenger Train.*—An unbraked fish or fruit van, cattle waggon, goods or milk truck, may be run in a passenger train in front of the rear brake, provided it be furnished with a vacuum pipe, spring buffers, and screw couplings, without such train having to be run under the conditions affecting mixed trains referred to in page 11* of this circular. It must be borne in mind that any such vehicle must form one of the authorised proportion of unbraked vehicles, and must not be run in addition to that number.

14. *Kind of brake in use by each Company.*—The following table shows the description of continuous brake in use on the various railways:—

Automatic Vacuum Brake.	Westinghouse Brake.
Aylesbury and Buckingham.	Ayrshire and Wigtownshire.
Barry.	Caledonian.
Brecon and Merthyr.	Colne Valley and Halsted.
Cambrian.	East and West Junction.
Cheshire Lines.	Eastern and Midlands.
Furness.	*Glasgow and South-Western.
*Glasgow and South-Western.	Great Eastern.
Great Northern.	Great North of Scotland.
Great Western.	*Hull, Barnsley, and West Riding Junction.
Highland.	London, Brighton, and South Coast.
*Hull, Barnsley, and West Riding Junction.	London, Chatham, and Dover.
Lancashire and Yorkshire.	London, Tilbury, and Southend.
London and North-Western.	North British.
London and North-Western and Caledonian (West Coast Joint Stock).	North Eastern.
London and South-Western.	Rhymney.
Manchester and Milford.	West Lancashire.
Manchester, Sheffield, and Lincolnshire.	
Manchester and South Junction, and Altrincham.	
Maryport and Carlisle.	
Mersey.	
Midland.	
Midland and South-Western Junction.	
Neath and Brecon.	
North London.	
North Staffordshire.	
Rhondda and Swansea Bay.	
Somerset Joint Committee.	
South Eastern.	
Taff Vale.	
Wirrall.	
Wrexham, Mold, and Connah's Quay.	

*Note.—Have some of their stock fitted with Vacuum and some with the Westinghouse Brake.

15. *Dual piped Vehicles.*—Some companies who do not use the vacuum-brake have fitted a limited number of their vehicles with vacuum pipes, and traffic from those companies intended to be sent through to the Great Western Railway will usually be found on arriving at the Junction to be loaded in such vehicles. If the traffic arrives in vehicles not fitted with a vacuum it *must be transferred* into properly fitted vehicles, except in the case of special trains which by arrangement are run through by the foreign company's engine. The foreign vehicle, if it be not braked, but only piped, must form one of the authorized proportion of unbraked vehicles, and not be run in addition to that number.

The London, Brighton, and South Coast, and the London, Chatham, and Dover Companies have some of their engines fitted with vacuum brake apparatus, so that they can take forward over those lines a Great Western train of vacuum fitted carriages.

The Great Western Company has fitted up a number of family and other carriages, horse-boxes, carriage trucks, fruit and poultry vans with the Westinghouse pipe, into which traffic for the companies using the Westinghouse brake must be loaded as far as practicable. All such vehicles, when empty, must be sent home to the stations marked upon the sole bar. If such a vehicle is not at hand, or if there is not time to procure one, the traffic must be loaded

* *See* page 88.

in ordinary Great Western vehicles, and a telegram sent to the transfer station on the foreign company's line on which the Westinghouse system applies. (See List).

16. *Scale to calculate how many unbraked Piped Vehicles may run on Train.*—The following scale shows what proportion of unbraked vehicles, fitted with continuous pipes, may be attached to a passenger train as provided in clauses 8 and 9:—

To trains running no more than 10 miles without a stop, unbraked vehicles, fitted with continuous pipes (or without a pipe in the case of the last vehicle shown in clause 12), may be attached in the proportions given in the following table:—

To a Train consisting of Braked Vehicles equal to—		Unbraked 8-wheel Carriages.	Unbraked 4 or 6-wheel Carriages.	Unbraked Horse Boxes, Carriage Trucks, or other Vehicles (not carrying Passengers other than men in charge of Stock).
1	Plus engine and tender (3) = 4 may be attached	—	or 1	or 2
1½	" " = 4½ " "	—	" 1	" 3
2	" " = 5 " "	—	" 1	" 3
2½	" " = 5½ " "	—	" 1	" 3
3	" " = 6 " "	1	" 2	" 4
3½	" " = 6½ " "	1	" 2	" 4
4	" " = 7 " "	1	" 2	" 4
4½	" " = 7½ " "	1	" 2	" 5
5	" " = 8 " "	1	" 2	" 5
5½	" " = 8½ " "	1	" 2	" 5
6	" " = 9 " "	1	" 3	" 6
6½	" " = 9½ " "	1	" 3	" 6
7	" " = 10 " "	1	" 3	" 6
7½	" " = 10½ " "	1	" 3	" 7
8	" " = 11 " "	1	" 3	" 7
8½	" " = 11½ " "	1	" 3	" 7
9	" " = 12 " "	2	" 4	" 8
9½	" " = 12½ " "	2	" 4	" 8
10	" " = 13 " "	2	" 4	" 8
10½	" " = 13½ " "	2	" 4	" 8
11	" " = 14 " "	2	" 4	" 8
11½	" " = 14½ " "	2	" 4	" 8
12	" " = 15 " "	2	" 5	" 8
12½	" " = 15½ " "	2	" 5	" 7
13	" " = 16 " "	2	" 5	" 7
13½	" " = 16½ " "	2	" 5	" 6
14	" " = 17 " "	2	" 5	" 6
14½	" " = 17½ " "	2	" 5	" 5
15	" " = 18 " "	2	" 5	" 5
15½	" " = 18½ " "	2	" 4	" 4
16	" " = 19 " "	2	" 4	" 4
16½	" " = 19½ " "	1	" 3	" 3
17	" " = 20 " "	1	" 3	" 3
17½	" " = 20½ " "	1	" 2	" 2
18	" " = 21 " "	1	" 2	" 2
18½	" " = 21½ " "	—	" 1	" 1
19	" " = 22 " "	—	" 1	" 1
19½	" " = 22½ " "	—	" —	" —
20	" " = 23 " "	—	" —	" —

Scale to calculate how many unbraked Piped Vehicles may run in Train.—To trains running more than 10 miles without a stop, unbraked vehicles, fitted with continuous pipes (or without a pipe in the case of the last vehicle shown in clause 12), may be attached in the proportions given in the following table:—

To a Train consisting of Braked Vehicles equal to—		Unbraked 8 wheeled Carriages.	Unbraked 4 or 6 wheeled Carriages.	Unbraked Horse Boxes, Carriage, Trucks, or other Vehicles (not carrying Passengers other than Men in charge of Stock).
1	Plus engine and tender (3) = 4 may be attached	—	or —	or —
2	" " = 5 " "	—	" 1	" 2
2½	" " = 5½ " "	—	" 1	" 2
3	" " = 6 " "	—	" 1	" 2
3½	" " = 6½ " "	—	" 1	" 2
4	" " = 7 " "	—	" 1	" 2
4½	" " = 7½ " "	—	" 1	" 3
5	" " = 8 " "	—	" 1	" 3
5½	" " = 8½ " "	—	" 1	" 3
6	" " = 9 " "	—	" 1	" 3
6½	" " = 9½ " "	—	" 1	" 3
7	" " = 10 " "	1	" 2	" 4
7½	" " = 10½ " "	1	" 2	" 4
8	" " = 11 " "	1	" 2	" 4
8½	" " = 11½ " "	1	" 2	" 4
9	" " = 12 " "	1	" 2	" 4
9½	" " = 12½ " "	1	" 2	" 5
10	" " = 13 " "	1	" 2	" 5
10½	" " = 13½ " "	1	" 2	" 5
11	" " = 14 " "	1	" 2	" 5

To a Train consisting of Braked Vehicles equal to—		Unbraked 8 wheeled Carriages.	Unbraked 4 or 6 wheeled Carriages.	Unbraked Horse-Boxes, Carriage Trucks, or other Vehicles (not carrying Passengers other than Men in charge of Stock).
11½	Plus engine and tender (3) = 14½ may be attached	1	or 2	or 5
12	" " = 15 " "	1	" 3	" 6
12½	" " = 15½ " "	1	" 3	" 6
13	" " = 16 " "	1	" 3	" 6
13½	" " = 16½ " "	1	" 3	" 6
14	" " = 17 " "	1	" 3	" 6
14½	" " = 17½ " "	1	" 3	" 5
15	" " = 18 " "	1	" 3	" 5
15½	" " = 18½ " "	1	" 3	" 4
16	" " = 19 " "	1	" 3	" 4
16½	" " = 19½ " "	1	" 3	" 3
17	" " = 20 " "	1	" 3	" 3
17½	" " = 20½ " "	1	" 2	" 2
18	" " = 21 " "	1	" 2	" 2
18½	" " = 21½ " "	—	" 1	" 1
19	" " = 22 " "	—	" 1	" 1
19½	" " = 22½ " "	—	" —	" —
20	" " = 23 " "	—	" —	" —

N.B.—Only one unpiped Vehicle may go behind rear Brake.—Only one unbreaked vehicle—not two half vehicles—of whatever kind it may be, may be run behind the rear van, and such a vehicle is not required to be furnished with a pipe. It must, however, be regarded as one of the authorized number of unbraked vehicles in the train.

List of G.W.R. dual Piped Vehicles.—The vehicles already fitted with Westinghouse brake apparatus are as under:—

Fitted with Pipe and Brake complete.

		Located at
Family carriages	512–513	Paddington.
" "	509	Bristol.
Composite carriages	910–11	"
Invalid carriage	501	Paddington.
Horse boxes	705	Bristol.
"	706	Exeter.
"	701	Reading.
"	702	Worcester.
"	703	Hereford.
"	704	Swindon.
"	707	Plymouth.
"	708	Cardiff.
"	709	Oxford.
"	710	Wolverhampton.

Fitted with Pipe only.

		Located at
Carriage trucks	386–387	Bristol.
" "	388	Oxford.
Fruit van	47,883	Plymouth.
"	47,896	Worcester.
Poultry van	956	Penzance.
"	957	New Milford.

Fitted with Pipe only.

Horse Boxes.	Located at	Horse Boxes.	Located at
686–687	Bristol.	696–697	Newbury.
688–689	Gloucester.	685–692	Reading.
690–679	Oxford.	695–698	Hereford.
694	Exeter.	676–678	Swindon.
691	Plymouth.	680	Shrewsbury.
693–699	Cardiff.	681–677	Swansea.
700	Chippenham.	682	Wolverhampton.
711–715	New Milford.	683	Truro.
716	Chipping Norton Junction.	684	Southall.
		712–720	Didcot.
717	Shifnal.	713	Hartlebury.
718–719	Birmingham.	714	Newton Abbot.

17. *How to connect L. & N.W. and G.W.R. Brake Vehicles.*—Other railway companies' vehicles fitted with the automatic vacuum brake may be coupled up and worked with G.W.R. stock. Such vehicles have a valve for releasing the brake by hand, which can be opened by means of a rod or wire at each side of the vehicle. London and North-Western carriages have a handle at each side; and when attached to G.W.R. vehicles should have the handle put to the left unless the brake is defective, when it should be put in the centre position.

Starting of Trains.

18. The man whose duty it is to connect the flexible pipes before the train commences its journey, and at stations where the formation of the train has been altered or added to, must inform the driver as soon as all the flexible pipes are connected, and on receiving this intimation the driver must use his ejector in order to create the vacuum, and be ready to start instantly the signal is given.

19. *Guard before giving signal to start must see that pipes are all coupled, and 20 inches showing on Van gauge.*—The rear guard, before giving to the front guard or to the driver, as the case may be, the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain—

1st. That all vehicles throughout the train fitted with the automatic vacuum brake, or pipe, have the flexible pipes properly coupled up:

2nd. That the flexible pipe at the rear of the last brake vehicle is properly placed upon the stop plug:

3rd. That at least 20 inches of vacuum is indicated by the gauge in the rear van on the train.

Signal to start means that all is in order.—If he find that all is right to proceed, the usual signal to start must be given, viz., whistle and green flag by day and whistle and green light by night, and the driver must regard that signal not only as an order to proceed but as an assurance that the continuous-brake apparatus is in proper order; that it is applicable to the whole of the vehicles on the train; and that there are at least 20 inches indicated by the gauge in the rear van of the train.

Driver to know how many unbraked vehicles are on Train.—In the event of there being any vehicles on the train not fitted with the vacuum brake, or fitted with the continuous pipe only, the driver must be informed verbally of the number before starting, and he must be kept informed in this respect at intermediate stations where the formation of the train is interfered with.

How signal to start is to be given.—Where there are two or more guards on the train, the signal to start in the manner indicated must be given by the rear guard to the front guard, and by the front guard to the driver. In like manner, if there are any vehicles to which the vacuum brake cannot be applied, that information must be given by the rear guard to the front guard as soon as the formation of the train is complete, and by the front guard to the driver before he gives the signal to start.

Trains running daily with formation unaltered.—The instructions given in this rule do not apply to trains made up entirely of vehicles fitted with a continuous brake, running daily with the formation unaltered and the brake complete. When, however, in such cases the formation is altered, or vehicles are attached or detached, the guard and the engine-driver must communicate with each other.

20. *Guard to see Hand Brake is screwed off.*—In the case of vehicles fitted with the combined hand and vacuum brake, the guard must see before starting that the hand brake is screwed "full off," and the handle secured by means of the chain provided for the purpose.

21. *Duty of Driver before starting.*—The driver, before starting, must be careful to see :—

1. That the vacuum pipe of his engine is properly coupled up to the leading vehicle of the train :
2. That at least 20 inches of vacuum is indicated by the gauge on the engine.

If he receives the signal to start without being informed that any vehicles are not fitted, he must accept that signal as an order to proceed, and as an assurance that the continuous-brake apparatus is in proper order ; that it is applicable to the whole of the vehicles so fitted on the train ; and that at least 20 inches is indicated by the gauge on the rear van of the train.

Hand Brake to be used if Vacuum is not in order.—If from any cause the engineman is unable to obtain at least 20 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand brakes.

Stopping of Trains.

22. *Guards not to apply Vacuum Brake.*—Guards must never apply the automatic vacuum brake unless it be necessary that they should do so *to avoid accident*, and whenever they do so a full report of the circumstances must be made on their journals. They must at all times be ready to apply the *hand brake* should the engineman call by whistle for assistance.

23. *Driver to open Air-Valve gradually.*—When the automatic vacuum brake is to be used for the ordinary stoppage of trains, it must be by the engineman opening the air valve on the engine, but it must be done gradually and never suddenly or with full force, except in cases of emergency.

24. *When Vacuum cannot be used Train to be controlled by Hand Brakes.*—When the automatic vacuum brake cannot be used the train must be controlled for ordinary stoppages by the hand-brake on the engine and the guards' hand brakes.

25. *Vacuum Brake to be tested before passing Distant Signal ; certain Stations to be entered using Hand Brakes only.*—In approaching terminal stations, stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, at which the train has to stop, enginemen must test the continuous brake before passing the distant-signal, and the speed of the train must be reduced by it ; and enginemen must always enter such stations (or a dead-end bay at any station) at such a speed as to enable them to stop the train at the proper place by the application of the ordinary hand-brake only. The automatic vacuum brake or steam brake must only be used in cases of emergency, and guards must watch the speed of trains, and assist enginemen by the use of the hand-brake when necessary.

If Vacuum is out of order Hand Brakes must be relied on.—Unless the continuous brake is working properly when thus tried, the engine-driver must whistle for the guard's hand-brake, and inform the guard, as early as practicable, that the continuous brake is out of order, and the hand-brake must then be relied upon for working the train. Special care must then be taken in approaching stations at which the train has to stop.

26. *Driver to use his Ejector before he stops after applying Vacuum Brake.*—Just before coming to a stand, after the application of the automatic vacuum brake at stations, or when stopped on the road, the engineman must use his ejector so as to partially release the continuous brake. This will prevent any rebound of the carriages, and will also enable the engineman to start his train immediately on receipt of the signal to do so. The fireman must keep his hand-brake on until on the point of starting the train.

27. *Guard to apply Hand Brake if Train separates.—In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.*

Slip Coaches.

28. *Slip guard's duties before starting.—Before starting, the slip guard must see :—*

1st.—That the flexible pipe couplings and the slip cock are properly connected, and that the chain attached to the cock is securely looped up to the swan neck pipe of the coach in front of his slip.

2nd.—That both the handle of the cock in the coupling, and the handle of the cock in his compartment are turned towards the left hand side of the train.

3rd.—That 20 inches at least is indicated by the gauge in the slip compartment.

29. *To use Hand Brake if less than 20 inches.*—If 20 inches cannot be obtained by the engine, the vacuum brake *must not be worked*, but the slip must depend entirely on the hand brakes.

30. *How to slip.*—The two cock handles must on no account be touched until just before the guard wishes to slip. He must then first pull the handle of the cock in the hose coupling towards the rear of his train, and then pull the handle of the cock inside his compartment to the "*Brake off*" position ; until he has done this he will be unable to move the slip lever.

31. *Disconnect Hose Pipe before slipping.—After both* handles have been pulled over, as described in the foregoing paragraph, and immediately before slipping, the guard must raise the slip cock sufficiently to disconnect it from the hose pipe attached to the slip carriage.

32. *How to apply Brake after slipping.*—Immediately after slipping the guard must apply the hand brake on the slipped portion, and when speed is reduced sufficiently, take it off and allow the slip carriage to run to the station platform. The vacuum brake can be applied by pushing the handle to the "*Brake on*" position, but this should only be done in case of emergency.

33. *Guard only to apply vacuum to avoid accident.*—Before slipping, the guard can apply the brake throughout the whole of the main train by lifting the handle of the brake setter in his compartment, but this must only be done *in order to avoid accident.*

34. *Guard to lock up Brake Handle after slip has stopped.*—Immediately after the slip portion of the train has come to a stand after slipping, the guard must close and lock the cover of the case containing the brake handle, and must keep it locked until it is again required for use.

35. If a driver, after the slip portion has been separated from the train, should find it necessary from

any cause to stop, he must take care not to do so until his train has passed the platform, so as to avoid the slip portion colliding with his train.

General Instructions.

36. *Vacuum not to be used when running through Slip Stations after Slipping.*—In running through slip stations after a slip carriage has been detached, the vacuum brake on the main train must not be used except in cases of emergency. If it is necessary to control the speed of the train, the hand-brake must be employed, and in any case the greatest caution should be used to prevent the slip carriage overtaking the train.

37. *Vacuum to be used down inclines.* — In descending inclines, the engineman must, when necessary to reduce the speed, use the automatic vacuum brake in preference to the hand-brakes.

38. *Air-valve to be opened before attaching or detaching.*—At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air valve on the engine, so that there may be no delay in coupling or uncoupling.

39. *Lubricate by blacklead, not by grease.*—As india-rubber is dissolved by oil or grease, it is most important that nothing of a greasy nature should be applied to, or allowed to reach the piston or piston rod. The only lubrication which is required is a little pure blacklead, which must be placed inside each cylinder by the persons appointed for the purpose. The other part of the brake must be cleaned and oiled by the examiners in the usual way.

40. *Failures to be reported by Driver and Guard.*—If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his train-bill, which must be accompanied by a special report giving full particulars of the irregularity.

41. *Lever of Brake Setter to be free.*—Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever of the brake setter.

42. *Hose couplings to be placed on Plug Stops when detached.*—When the flexible pipes between the engine and train are disconnected, the couplings must be placed on the plug stops provided for the purpose. Detached carriages must always have the flexible pipe couplings placed on the plug stops.

43. *Flexible pipes must not be stepped on.*—Porters and others are cautioned that they must not pass between the vehicles over the flexible pipes while a train is standing at a platform.

44. *Front Driver to use Vacuum Brake.*—When more than one engine is working a train, the leading engineman must control the brakes for ordinary stoppages.

Mixed Trains.

45. The regulations issued by the Board of Trade limit the number of trains which may carry both passengers and goods waggons, and lay down conditions under which such trains may be run. These conditions are as under:—

(*a.*) *Passenger Vehicles must be in front of Goods Vehicles, and Brake applied from Engine.*—The vehicles conveying passengers must be formed in front of all goods waggons. The vacuum brake must be capable of being applied to all such passenger vehicles from the engine, and there must be a hand brake vehicle in the rear of all, with a guard in it. There is no obligation to apply the continuous brake from the guards' van or compartment, and although it will be generally convenient for the passenger brake to be formed next to the coaches, it may, if necessary, be placed in the rear of the waggons, in which case the guard must ride in it.

One Guard for 10 *Vehicles. Passengers not to ride in Brake Carriage if behind Waggons.*—When the train does not consist of more than 10 vehicles, only one guard is required, and he must ride in the brake at the rear of the train, and if the passenger brake is a brake-carriage, passengers must not be allowed to ride in it when it is placed behind the waggons.

Carriages to go into Siding if there is more than one shunt.—At intermediate stations if the goods work entails more than one shunt, the passenger carriages must, if practicable, be placed in a siding and secured, before the shunting is commenced.

(*b.*) *Two Guards and two Brakes if more than* 10 *Vehicles; three if more than* 20; *maximum* 25; *last Brake with Guard in it to be at rear.*—When the total number of vehicles exceeds 10 there must be a second guard and a second brake on the train; and when the total number exceeds 20, there must be three guards and three brakes. No "mixed" train may have more than 25 vehicles. The passenger brake must be placed in the rear of the coaches, and the other brakes at suitable intervals of distance amongst the waggons, the last brake being at the rear of all the other vehicles, with a guard in it. Each vehicle is to count as one, and not on the basis shown for passenger trains. The engine and tender are not to be counted.

(*c.*) *Average speed between Stations* 25 *miles an hour, not to run over* 10 *miles without stopping.*—The average speed of a mixed train between any two stopping places must not exceed 25 miles an hour; and all such trains must be timed to stop at stations at intervals not exceeding 10 miles.

(*d.*) *Passengers on combined Stock and Passenger Trains to be in front of waggons. Drovers and Grooms with Stock not considered Passengers.*—When trains are run for the conveyance of horses, cattle, or other stock, and vehicles are added for the conveyance of passengers, the vehicles containing the passengers must be placed in front of all goods waggons; and the train must be run subject to the conditions applying to mixed trains. Drovers, grooms, or other persons travelling in charge of the stock are not, however, to be considered as passengers. Such mixed trains must only be run on sections of the line on which the Board of Trade have sanctioned the running of mixed trains.

46. *Authorised mixed Trains marked "mixed" in Service Book.*—The only passenger trains authorised to be used as "mixed" trains for the conveyance of traffic in goods waggons are headed "mixed" in the service time tables, and station masters and others in charge of stations are held responsible for seeing that no other passenger train is used for such traffic beyond the one unbraked vehicle allowed to be placed at the rear of a passenger train, as provided in clause 12 of this circular.

Hand-Brake Power on Passenger Trains.

47. *Persons in charge of Stations to see that Trains have enough Hand-Brake Power.*—Station masters, inspectors, or others in charge of stations at which trains commence their journey, will be responsible for seeing that all trains made up at or starting from their stations are provided with sufficient hand-brake power, and the same responsibility will attach to persons in charge, adding vehicles to the trains at intermediate stations.

48. *As a Rule two Brakes to be on each Train.*—As a general rule, passenger trains should be formed with a brake van in front, and a brake van or a carriage fitted with a hand-brake at the rear.

49. *Where Guards are to ride.*— The guard in charge of the train must in all cases ride in the rear brake, except in the case of certain trains which by working into a station and out again, become reversed on the latter portion of the journey; and when there are two guards, the under guard must ride in the front brake, except as shown in the exceptions given in this clause.

50. *Number of Vehicles allowed behind rear Brake. —On easy gradients not steeper than* 1 *in* 200.—Four vehicles containing passengers may, if necessary, be worked behind the rear brake-van, but when passengers are so conveyed, and horse-boxes or carriage trucks have also to be forwarded, the total number of vehicles of any sort behind the rear brake-van must not exceed six.

On gradients steeper than 1 *in* 200.—One passenger carriage may, if necessary, be worked behind the rear brake-van, but the total number of vehicles of any sort behind the rear brake-van must not exceed four in any case.

51. *Relative number of Brakes and Guards to Vehicles on Train.*—Trains must be provided with guards according to the work which has to be done, but the minimum number of guards and hand-brakes must be as under :—

From 1 vehicle to 10 vehicles, 1 brake and 1 guard.

From 11 vehicles to 20 vehicles, 2 brakes and 2 guards.

† From 16 vehicles to 20 vehicles (on gradients deeper than 1 in 200) 3 brakes and 2 guards, (1 near middle of train).

* Over 20 vehicles, 3 brakes and 3 guards (1 near middle of train).

52. *Relative weights of* 8-*wheel,* 6-*wheel, and* 4-*wheel Vehicles.*—The limitations given above apply to 4-wheel or 6-wheel vehicles. Two 8-wheel vehicles must be reckoned as being equal to three 6-wheel or four 4-wheel vehicles.

53. *Guards to see that Hand-Brake is in good order.* —Guards when taking charge of their vans must test the hand-brake, and see that it is in all respects clean, well oiled, and fit for instant use.

These instructions cancel all previously issued on this subject, including Circulars 866 *and* 1821, *issued by the Superintendent of the line, relative to the Railway Regulation Act, and brake power on passenger trains.*

N. J. Burlinson,
Superintendent of the Line.
W. Dean,
Chief Locomotive Superintendent and Engineer.
November 1893.

* As a general rule no passenger train should be formed of more than 20 vehicles, excluding the engine and tender.

† In such cases the front guard must ride in the middle brake.

LANCASHIRE AND YORKSHIRE RAILWAY.

Instructions to Engine Drivers and Guards respecting the Automatic Vacuum Brake under the Control of the Driver.

1. The brake can be applied throughout the train by the driver from the engine, or by the guard from the van. The amount of brake power at command depends on the amount of vacuum obtained.

2. It is the duty of the fireman, when the engine is attached to the train, to connect the hose coupling on the engine to that on the train; and when the engine is separated from the train, to place the hose coupling of the engine on to the plug provided for the purpose. The driver must see that the fireman attends to this.

3. Before starting, the driver must see that the gauge indicates at least 18 inches of vacuum. This is done by admitting steam to the small ejector by means of the steam cock provided for that purpose. To apply the brake, move the lever on the brake valve to "*On.*" In ordinary running this lever must stand at "*Off,*" or "Running Position."

4. Previous to engines or vehicles being attached or detached the vacuum in the train pipe must be destroyed by opening the application valve, so that there may be no delay in coupling and uncoupling, and to avoid damage to the couplings. After the train has again been made up, and before it is started, the release wire under the body of each vehicle must be pulled.

5. To couple the hose pipes, the fireman, shunter, or porter must take one in each hand and lift them sufficiently high to hook the bottom horns of the coupling together first, and then, by lowering them, place the top horns of couplings in the slots.

6. To uncouple the hose pipes, the fireman, shunter, or porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate.

7. Guards must record on the journals the amount of vacuum registered when starting with their train.

8. It is the duty of the shunter or porter to connect the hose couplings between the carriages, and to place the hose coupling in the rear of the last vehicle on to the plug provided for that purpose. The guard must see that this has been properly attended to.

9. To release the brakes (the engine having left the train), first see that the hose coupling at one end of the train is off the plug; then pull the wire fixed under the body of each carriage as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes fall off by gravity.

10. A chain with hook is attached to each end of the several vehicles composing the coaching stock. The shunter must put this hook round the rod of the screw coupling immediately above the ball, to prevent the latter touching the brake pipes.

11. *The guard is not to make use of the brake except in cases of emergency.*

12. When the guard has occasion to apply the brake, he must press down the lever on the valve placed in his van. This admits air throughout the train pipe. This valve in the van opens automatically when the brake is applied violently by the driver, and ensures rapid action; it should, however, only be so applied in cases of emergency. The guard must see by the gauge that a vacuum of at least 18 inches is maintained, or report otherwise to the driver.

13. In case of a break-loose the guard in the rear van must put the hand brake hard on, and place the strap on the wheel, before going back to protect his train. When a train or any portion of the same is detached, the vacuum brake must not be depended upon, but the hand brake must be used where there is one available; in other cases scotches must be utilised, so as to prevent the vehicles moving after the vacuum has been exhausted.

14. In order that engine drivers, before starting from stations with trains fitted with the automatic brake, may know when the brake connections are complete, the man whose duty it is to couple up the hose pipes must, as soon as the work is done, inform the guard that all is ready for the vacuum to be created. The driver must not open the ejector until the guard, by exhibiting steadily a white hand signal, indicates that he may do so.

15. Before giving the signal for a train to start, the rear guard must satisfy himself that the vacuum gauge in his van shows not less than 18 inches of vacuum. If the gauge does not show the proper amount of vacuum, the guard must hold up steadily a white flag or hand lamp towards the driver, and continue to exhibit it until the necessary vacuum is reached.

16. Engine drivers must test the continuous brake before passing the distant-signal of any terminal or junction station at which the train has to stop. Should the brake not be working properly when thus

tried, the driver must whistle for the guard's hand brake, and inform the guard that the continuous brake is out of order, and that the hand brake must be relied upon for working the train.

Engine drivers are prohibited from using the automatic brake after passing the end of the platform at which they have to stop when approaching terminal and the following junction stations: Blackburn, Bolton, Manchester, Preston, Wakefield, York, and when entering all bay sidings. The train must be brought to a stand in its proper position by the use of the hand brake alone. The guard will be held responsible for applying the hand brake in his van.

Should it be necessary through any emergency to apply the continuous brake after passing the end of the platform, both the driver and the guard must specially report the circumstances. *See* Special Order M 7938.

17. When backing an engine to a passenger train before coupling up, the fireman must stand by his hand brake.

18. In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake, the guard applying the manual brake for each stop.

19. Should the automatic vaccum brake altogether fail on a train fitted with a manual brake on the van at each end of the train, the driver must advise the guard, who must then work the rear brake if there is only one guard with the train; and if the train consists of more than six vehicles, and there is more than one brake-van on the train, the guard must obtain a porter to take charge of the extra van. These instructions will also apply in case of a non-vacuum engine being provided to work a train of vacuum stock

20. Guards must be careful that luggage, &c., is arranged in the vans so that nothing can rest against or in any way interfere with the application valve lever.

J. A. F. Aspinall, Chief Mechanical Engineer.
Chas. J. Nicholson, Superintendent.
Manchester, July 1891.

LONDON AND NORTH-WESTERN RAILWAY.

Continuous Brakes.

Instruction of Staff in use of Continuous Brakes.

Inspectors in the Carriage Department have been appointed to instruct the staff at the several stations, as well as the guards, in the manipulation of the brake and its fittings, in addition to which, at the following stations, there are men specially appointed to look after the vacuum brake apparatus, and any defect occurring in working must be pointed out to them by the guards and drivers immediately on arrival at any of those places:—

Euston,	London Road,
Broad Street,	Exchange,
Willesden,	Leeds,
Bletchley,	Chester,
Northampton,	Llandudno Junction,
Peterborough,	Bangor,
Rugby,	Holyhead,
Birmingham,	Bolton,
Walsall,	St. Helens,
Wolverhampton,	Wigan,
Dudley,	Preston,
Derby,	Windermere,
Nuneaton,	Carlisle,
Stafford,	Shrewsbury,
Crewe,	Craven Arms,
Liverpool,	Abergavenny Junction,
Stockport,	Swansea.
Longsight,	

Should it be necessary at any time to send brakesmen or porters in charge of the trains in lieu of the ordinary guards, care must be taken to ascertain that they understand the instructions for working the continuous brake, which will be found posted up in each of the vans.

Vacuum Brake on West Coast Joint Stock, London and North-Western Railway, and Caledonian Railway Brake Vans.

On arrival at Carlisle of the through West Coast trains, the London and North-Western Company's fireman must leave the vacuum pipe off the stopper when he uncouples his engine from the train. This will enable the stored-up power reserved in each vehicle to be properly destroyed. The Caledonian fireman will put the vacuum pipe on the stopper when he couples his engine on to the train.

Working of the Vacuum Brake during Frost.

Notice to Locomotive Foremen and Enginemen.

In order to prevent the accumulation of ice in the pipes of the vacuum brake apparatus on engines and carriages during frosty weather, enginemen are hereby instructed that before leaving the shed to work a train they must remove the tail pipe from the stopper at the back of the tender, or both on tank engines, and give a good blow through with the large ejector. This must also be done before leaving their engines on the shed when finishing work.

Before starting with a train, and also at the principal stations at which the train is timed to stop, they must give the pipes a good blow through with the large ejector while the tail pipe of the rear vehicle of the train is off the stopper, so as to clear out any moisture that may have formed in the pipes.

A man will be appointed, belonging to the Locomotive Department, to remove and replace the tail pipe, and enginemen, on arrival at a station where the pipes are to be blown through, must look out for the person told off for this duty, who, after removing the tail pipe, will signal to the driver when to blow up, and who will replace the pipe on the stopper after the pipes have been cleared by the large ejector.

The locomotive foreman of each district must use his own discretion when to appoint men for this duty, being guided by the severity or otherwise of the frost. He must also, at his discretion, arrange for the vacuum-brake pipes between the engine and tender to be uncoupled while the engines are standing in the shed.

To Brake Attendants, Carriage Couplers, Guards, &c.

Instructions for Working the Automatic Vacuum Brake.

Description.

1. The automatic brake is continuous throughout the whole length of the train—each vehicle carrying its own reservoir and cylinder, which are connected by a branch pipe to the main train pipe. Should a train fitted with this brake become divided when running, the hose-pipes will become detached, and the brake will go on throughout each portion of the train.

2. The brake power available depends upon the amount of vacuum maintained by the driver. It is therefore necessary that at least 18, and not more than 20 inches of vacuum be maintained in the rear van whilst the train is in motion.

3. There are two gauges in the van, one showing the amount of vacuum in the train pipe, and the other the amount of vacuum in the reservoir of the brake-van.

4. The brake is applied by the driver admitting air into the main train pipe, or by the guard opening the valve on the iron stand-pipe fixed near his seat. The guard must only apply the vacuum brake in cases of emergency. The valve must be kept open until the needle of the train-pipe gauge goes back to zero.

5. When a sudden application of the brake is made, the valve in each guard's van will open automatically, thereby admitting air into the main train pipe, and thus ensuring a rapid application of the brake. The brake is released by the driver re-creating the vacuum throughout the whole train.

Arrangements for Cutting-off Brakes.

6. On all vehicles there is a quadrant and lever on each side of the sole-bar.

(On some of the carriages the word "simple," appears instead of "release," but this will gradually be made uniform with the description above named.)

The brake can be released on the different kinds of vehicles (the hose-pipe being first taken off the stopper at one end of the train or vehicle), as follows :—

1st. By moving the lever from "auto" to "simple," or by pulling the wire which will be found close to the lever.

2nd. By moving the lever from "auto" to "release" or "cut off."

The hose-pipe in each case must be off the stopper at one end of the train or vehicle.

When the brake gear on any vehicle is out of order, from leakage or any other cause, the lever on the sole-bar must be moved into the "cut-off" position, but care must be taken that the brake is properly released before doing so. This will prevent the brake gear from working on that vehicle, but will not interfere with the brake on the remainder of the train.

Starting.

7. In order that engine-drivers, before starting from stations with trains fitted with the automatic brake, may know when the brake connexions are complete, the man whose duty it is to couple up the hose-pipe must, as soon as the work is done, go to the guard and tell him all is ready for the vacuum to be created. The driver must not open the ejector until the guard, by exhibiting steadily a white flag by day and a white light by night, indicates that he may do so.

8. Before giving the signal for a train to start, the *rear* guard must satisfy himself that both the gauges in his van indicate at least 18 and not more than 20 inches of vacuum, and that both gauges indicate the same amount of vacuum. *It will also be his duty, at all places where there are no carriage-brake examiners in attendance, to see that the quadrant handles on the sole-bars of the carriages are in the "auto" position.*

If the gauges do not show the proper amount of vacuum, the guard must hold up steadily a white hand signal towards the driver, and continue to exhibit it until the necessary vacuum is created.

When the gauges show that the proper amount of vacuum has been created, the brake must be tested by the guard applying it from the rear van.

The driver will recreate the vacuum, and no further brake signal will be given.

9. This test must always be made by the guard before starting the train from the station at which it was made up, or from any place at which the continuity of the brake has been interfered with by engines or vehicles being attached or detached.

10. Where two engines are attached to a train, the hose-couplings between the engines must be connected, nd the driver of the leading engine will be held responsible for the working of the brake.

During Journey.

11. Guards must see that during the journey nothing is placed so as to interfere with the lever of the emergency-valve in the brake-vans.

12. If, during the journey, the guard should notice anything wrong with the brake apparatus, or should either of the vacuum gauges show less than 18 inches, he must call the driver's attention by pulling the communication cord and showing to the driver a green flag or hand lamp. This will signify to the driver that the vacuum brake must not be relied upon for pulling up the train at the next stopping station, and the guard must be prepared to assist the driver with his hand brake. In the case of trains not fitted with communication cord, the guard must apply his hand brake, when approaching the next stopping place, in sufficient time to bring the train to a stand at the platform without the aid of the vacuum brake, and must advise the driver of the state of the vacuum brake, and must advise the driver of the state of the gauges in his van before proceeding.

13. Any irregularity or special circumstances in connexion with the working of the brake, or defect in its action, must be reported by the guard in charge to the superintendent of the line, as well as on his journal. The Carriage Department staff must be advised of the irregularity by both the guard and driver at the next stopping station. Guards must record in their books occasionally during the journey the amount of vacuum registered on the gauges. Should this at any time exceed 20 inches, the circumstance must be recorded by the guard on the engineman's ticket, the amount of vacuum maintained being tated.

14. The continuous brakes throughout the train being under the control of the driver, the use of the hand brake in the vans is not required for ordinary stops, but guards must apply the hand brake immediately on its being called for by the driver's whistle, *and must in all cases use their hand brakes to assist in stopping trains on approaching terminal stations, bay sidings, or principal stations, and must not rely on the driver's pulling up trains by means of the vacuum brake.*

15. In case of a break-loose, the guard in the rear van must put the hand brake hard on, and place the chain on the wheel before going back to protect his train.

Shunting.

16. When vehicles have to be moved after the engine is detached, it must first be seen that the hose-pipe at one end is off the stopper. The brake must be released as shown in paragraph 6. *Care must be taken by the person in charge of the shunting to see that the lever on the sole-bar is returned to the "auto" position after the brake has been released.*

17. It is the duty of the fireman, when the engine is attached to the train, to connect the hose-coupling on the engine to that on the train ; and it is his duty, when the engine is detached from the train, to place the hose-coupling of the front carriage on to the stopper provided for the purpose.

Instructions in Cases of Difficulty in Working the Automatic Brake.

18. If the driver is, from any cause, unable to work the automatic brake, *the brake must be cut off, and the train worked by the hand brakes only,* the speed being so regulated as to enable the driver to have full control of the train by use of the hand-brakes only.

In all such cases guards must be on the alert and assist in stopping the train with their van brakes.

Foreign companies' vehicles not fitted with the automatic vacuum brake, nor with the through vacuum pipes, must be placed in rear of trains in which the automatic brake is in use.

G. Findlay,
General Manager.

Euston Station,
April 1892.

LONDON AND SOUTH-WESTERN RAILWAY.

Instructions to Enginemen, Guards, Carriage Examiners, and all others concerned, as to the use of the Continuous Automatic Vacuum Brake.

Description.

1. The automatic vacuum brake stops the train by the application of the brake blocks to the tyres of the carriages in the same way as the ordinary screw brake, but the levers which apply the blocks, instead of being worked by a screw, are worked by a piston actuated by atmospheric pressure in a cylinder.

2. The following are the principal parts of the apparatus on the carriages :—

The cylinder.
„ piston or diaphragm.
„ ball valve.
„ main train pipe.
„ flexible branch pipe, connecting bottom of cylinder to train pipe.
„ vacuum chamber, connected to top of cylinder.
„ miniature sack, to prevent the admission of air to the bottom of piston.
„ release lever or ball valve, connected to each side of carriage underframe by wire cord.
„ dummy.
„ "Universal" hose and coupling.

3. By means of the ejector placed upon the engine the air is drawn out of the main train pipe, and from the top and bottom sides of the piston or diaphragm in the cylinder through the flexible branch pipe and through the ball valve from the vacuum chamber, so that in running a vacuum should be maintained throughout the system of 20 inches, and certainly not less than 15 inches.

4. *Brake on.*—The brake is operated either by the brake valve on the engine in connexion with the main train pipe or by the guard pressing downwards the lever of the van valve, which is likewise connected with the main train pipe. The effect of this is to admit air to the train pipe, and thence through the flexible branch pipe to the bottom side of piston, thereby applying the brakes, the top side and vacuum chamber maintaining the vacuum through the action of the ball valve, which closes immediately air is admitted to the train pipe.

On a full application of the brake—from whatever cause—all the van valves in the train will open automatically and admit air through each van valve simultaneously, thus obtaining a more rapid application of the brake.

5. In the event of a train parting, the "Universal" hose and couplings will, without damage, become detached, and the brakes will immediately apply themselves.

6. *Brake off.*—In order to release the brakes the driver must move the lever of brake valve on the engine to the position marked "off," when the ejector will at once re-create the vacuum throughout the system as before described, thus allowing the piston to fall by its own weight and thereby release the brakes.

7. To release the brakes on any carriages that require to be shunted, in the event of the engine not having done so before being detached from the train, the ball valve must be opened on those carriages by means of a small wire cord which is placed on either side of the carriage underframe. This admits air to the vacuum chamber and top side of piston, thus restoring equilibrium on both sides of piston, under which conditions the brakes fall off by their own weight.

8. A dummy is provided to which the rear coupling must always be attached.

Instructions for working.

9. In the formation of trains, the coaches fitted with the automatic vacuum brake must be placed together next to the engine, so that the automatic vacuum brake may be used.

10. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine or by the guard from his van, as before described; but in order that this may be done, it is imperative that the flexible connexions between each carriage and between the engine and the train be properly coupled up; also that the flexible connexion on the last vehicle fitted with the brake be placed on the dummy provided for that purpose as described in clause 8.

11. The brake must be used for ordinary stops, but must not be applied with full force except in cases of emergency. For ordinary stops, and particularly when approaching junctions where timed to stop, enginemen must be careful to reduce the speed, so that a moderate application of the brake will suffice.

12. Guards must not apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full and special report of the circumstances must be made, and the occurrence must also be notified on their journals; they must at all times be ready to apply the hand brake should the driver call for assistance.

13. *In approaching terminal stations, or stations at which other trains may be standing on the same line of rails, the vacuum brake must not be used except in cases of emergency, but the speed of the train must be so reduced that it may be brought to a stand by means of the hand and steam brakes alone.*

14. In descending inclines the engineman must use the automatic vacuum brake in preference to the hand and steam brakes.

15. *In running through slip stations after a slip carriage has been detached, the vacuum brake must not be used excepting in cases of emergency. If it is necessary to control the speed of the train, the hand brake must be employed; in any case the greatest caution should be used to prevent the slip carriage overtaking the train.*

16. *Guards.*—The guard before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman—

(*a.*) That all the flexible pipes are properly coupled up continuously throughout the train, and that the flexible pipe of the last brake vehicle is properly placed upon the dummy.
(*b.*) The number of vehicles in the train fitted with the brake the flexible pipes of which are coupled up to the engine.
(*c.*) The number of inches of vacuum indicated by the gauge in the rear van.

17. *Enginemen.*—The engineman before starting at the commencement of the journey, and also at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain from the guard the number of vehicles in the train fitted with the brake the flexible pipes of which are coupled up to the engine, and the number of inches of vacuum shown by the gauge in the rear van.

He must also be careful to see—

(*a.*) That the vacuum pipe of his engine is properly coupled up to the leading vehicle in the train.
(*b.*) The number of inches of vacuum indicated by the gauge on the engine.

18. If from any cause the engineman is unable to obtain at least 15 inches of vacuum he must inform the guards of the fact, and the train must be worked forward with the ordinary hand and steam brakes, and he must report on his daily brake return when he is not able to obtain 20 inches.

19. When the pipes between the engine and train are disconnected, the couplings must be placed on the

dummies provided for that purpose. Detached carriages must always have the hose couplings placed on the dummies.

20. At any station where the driver is informed that vehicles are to be attached to or taken off the train, the vacuum in the main train pipe must be destroyed, as described in clause No. 7, so that there may be no delay in coupling or uncoupling.

21. In the case of vans fitted with the combined hand and vacuum brake, the guard must see before starting that the hand brake is screwed full "off" and the handle secured by means of the chain provided for the purpose.

22. It is necessary that the forms specially provided for the purpose should be made out daily by enginemen working automatic vacuum brake trains, and be left with the daily return each night, and if from any cause the brake is not used, or there is any irregularity in its working a remark must be made by the driver on the form to that effect, and also by the guard on his journal.

The guard must also make a *special* report of the occurrence.

23. When vehicles are supplied with connecting pipes only, they must be considered as vehicles without the brake, but the brake connexions must be made as described in clause 10.

24. When vehicles not fitted with a continuous brake or having connecting pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, *the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand brake, and keep it tightly on, either until the train has come to a stand or the driver has taken off his brake, and is again going forward, as the case may be.* This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars which may occur when a powerful brake is applied to the front portion of the train only.

W. Adams,
Locomotive and Carriage Superintendent.

E.W. Verrinder,
Traffic Superintendent.

London, November 1882.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

Westinghouse Automatic and Continuous Brake.

Description and instructions for working.

Description.

Compressed air is the agent employed to apply the brake. The air is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself, in the case of a break-away, or the failure of its main pipe or couplings.*

The tender and each of the vehicles of the train are fitted with the following parts :—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston ; the latter in connexion with (4) the brake lever and blocks.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle.

To apply the brake, air is allowed by the driver to escape, or in an emergency, by any of the guards. This causes the triple valves to move down, the air stored in the supplementary reservoirs to pass instantly into the cylinders, the pistons and rods to be forced out, and the blocks to press against the tyres of the wheels.

To release the blocks from the wheels, air is allowed to pass from the main reservoir along the train. This moves the triple valves up, re-charges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the steam cylinder is kept well lubricated, (2) that the air pump is sparingly lubricated with a small quantity of mineral oil—tallow or lard oil must not be used in the air pump,—(3) that the pump is constantly run, but *never faster than is necessary to maintain the required air-pressure*, say for stopping trains 60 lbs., and for express trains 85 lbs.

The brakes must not be used with more than half the full force, except in case of danger.

The brakes are fully set when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

To apply the brakes lightly, the tap must be partially opened and gently closed when the pressure has been reduced from 4 to 8 lbs.

In releasing the brakes the handle must be moved against the stop and kept there for about five seconds, and then moved back just far enough to stop the flow of air from the small hole in the top of the tap.

Drivers, upon feeling the brakes are applied, must at once aid in stopping the train by turning the three-way cock and preventing escape of air from the main reservoir.

Guards.—After making up or adding to a train, or after another engine has been attached, the rear guard must ascertain whether the brake is connected throughout by examining the pressure in the gauge, slightly opening its escape tap, and ascertaining that air escapes, or, when a van is not the last vehicle, by opening the rear tap in the brake pipe.

Guards, when they have occasion to apply the brake from a van, must hold the handle and allow the air to escape until the train is brought to a standstill, but must only use the brake in case of emergency.

Guards *must, in all cases, screw the hand brakes clear off before starting.*

General.—Before detaching the engine, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which taps should be open when the hose couplings are united, except the one at the rear of the train. These taps must always be opened *after* connecting the hose couplings, *and closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small taps in the brake cylinder or pipes leading thereto. These taps, after the release of the brakes, must be closed. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting.

It is important to observe that the taps at the ends of the vehicles are open when the handles stand across, or away from the line of pipe, and closed when parallel to, or alongside the pipe.

When the handle of the tap of the triple valve stands across, or away from the valve, it is set for the automatic brake. When against the stop at an angle of 45°, the brake is thrown out of use on the carriage.

Care must be taken (1) that the brake connections are perfect, and properly adjusted for the wear of the blocks and wheels, (2) that the brake cylinders are perfect and lubricated occasionally with *mineral oil*, and (3) that the couplings and other parts are tight.

Carriage examiners must see that the cocks under each carriage are in their proper position before the train starts, so that it may not be delayed on the journey.

Shunters in all cases, after coupling the connexion pipes, must open the cocks at the end of each carriage except the last, so as to complete the brake throughout the train. In uncoupling, the connexion pipe cocks must be shut, but before doing so, shunters must satisfy themselves that the driver has taken the brake off, and that the hand brake at the rear of the train has been applied.

No person must tamper with the tap in the brake van, as by so doing the brake is instantly applied, and cannot be taken off again except by opening the cock under each carriage, or attaching the engine to the train.

Engine-drivers and guards are not to depend entirely upon the action and power of the brake, but, when approaching terminal stations, or junctions, must have their trains well under control, so that the trains can be brought to a standstill with the hand brakes, it necessary.

The engine-drivers and guards must ascertain before the departure of the train if the automatic brake is complete throughout the train.

Trains fitted with this automatic brake must not approach and enter terminal stations at a speed greater than that which has been usual with trains worked by the ordinary hand brake.

J. P. KNIGHT,
General Manager.

London Bridge,
16th April 1878.

LONDON, CHATHAM, AND DOVER RAILWAY.

WESTINGHOUSE AUTOMATIC AIR-BRAKE.

Description.

Compressed air is the power employed to work the brake.

The air, compressed by an air pump on the engine into a main reservoir, flows through the driver's brake valve into the main brake pipe, which extends the whole length of the train, and fills on each carriage a small reservoir by means of the triple valve attached to it. Each triple valve is also connected to a brake cylinder. As soon as the pressure in the brake pipe is lowered, the triple valve piston on each vehicle is moved down by the greater pressure above it, stored in the small reservoir, which is then allowed to pass instantly into the cylinder, force out the piston and rod, and thus cause the blocks to press against the wheels.

The brakes are released by an increase of pressure in the main pipe, produced by allowing air to pass from the main reservoir along the train. This moves up the triple valves, recharges the small reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

The driver or guards can apply the brake, and it applies itself in the case of a break-away or the failure of its main pipe or couplings.

Instructions.

Drivers must see (1) that the top or steam cylinder is kept well lubricated; (2), that the air cylinder is sparingly lubricated with the lubricant provided for the purpose; (3), that the pump shall be constantly run, but never faster than is necessary to maintain the required air pressure, say 50 to 60 lbs. for stopping trains, and from 70 to 80 lbs. for express trains.

For ordinary stops the brake should be applied lightly by turning the handle of the driver's valve to the right, and gently closing it again after a reduction of pressure in the brake pipe of not less than 5 lbs., nor more than 8 lbs., has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working the brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs.

Any further reduction is waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge. The driver, before starting, must ascertain the number of vehicles on the train.

In releasing the brakes the handle must be moved quite against the stop to the left and kept there for about 10 seconds, or until the pointer on the gauge shows signs of rising, and then be moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers must always satisfy themselves that the brake coupling on their engine is properly connected to that on the train, and that *the cocks on the brake pipe, except the one at the rear of the last vehicle connected with the brake, are open.*

The engine and tender brake blocks should be so adjusted that the pistons travel from 2 to 4 inches.

The drivers must be careful to drain the water out of the main reservoir and drip-cup once a week, and in winter time and frosty weather more frequently. The plugs in the triple valves and small reservoirs on engine and tender are to be taken out at least once a month.

If vehicles having different air pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train, and in order that the train may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to the train. When coupled to the train, he must put the handle of his brake valve in the release position until the train is charged with air, and this is shown to have taken place when the pointer of the gauge begins to rise.

If the brakes on the engine and tender are found to apply themselves when the engine is coupled to a train not charged, they should at once be taken off by opening the release valves from the brake cylinders.

After connecting the engine to the train, or after new vehicles have been added, the pipes and reservoirs should be charged as quickly as possible. The brakes should then be applied with full force by the driver, who should not start away until the inspector or guard has signalled that the brakes are acting on all the vehicles.

Should the driver discover any defect in the working of the brake which will render it ineffective, he must at once give the guard notice, and arrange with him as to the use of the hand-brake in the van when necessary.

In running into terminal stations with buffer-stops and at junctions where he has to stop, and also when moving up to attach his engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of the engine that the ordinary application of the hand-brake on the engine or tender will be sufficient to bring the train or engine to rest.

In ordinary stoppages at stations the driver must use the brakes so as to stop the train without any jerk.

When working the Westinghouse brake with two engines coupled together, the driver of the leading engine must take charge of the brake, and he must work it as he would on an ordinary train, not considering the second engine except as a vehicle. The driver of the second engine must keep his handle in the neutral position, and the donkey pump slowly and steadily working; by this means he shuts off all communication from the main reservoir to the train pipe, and the pressure in the reservoir is kept above that in the train pipe, otherwise the brakes would apply themselves by air escaping from the train pipe past the driver's valve to the main reservoir.

The driver, on finding that the brakes have been applied by the guard or automatically by burst hose or couplings parting, must at once aid in stopping the train by turning the handle of the driver's valve towards the right, thus preventing escape of air from the main reservoir.

The driver must enter on his ticket all cases of irregularity in the working of the brake, and call the attention of the examiner at the first station to any defect in the brakes of any of the carriages, and enter their numbers on his ticket.

Guards.—Before leaving the terminus, after adding to a train on the journey, or on another engine being attached, the rear guard must ascertain whether the couplings are connected and the cocks in the brake pipe are all open throughout the train by applying the brakes from his van and seeing that *they are released from the engine.* In making this test the pressure of the air in the pipes as shown by the gauge should not be reduced more than is absolutely necessary. If the brake is not in use on the whole train, or if the van is not the last vehicle, the test should be made by opening the cock in the brake pipe of the last vehicle connected.

A guard, when he has occasion to apply the brake from his van, must open the cock and allow the air to escape until the train is brought to a standstill, but he should only use the brake in cases of emergency.

Guards must in all cases screw the hand-brakes clear off before starting.

The guard must enter on his report all cases of irregularity in the working of the brakes.

Examiners (*Locomotive Department*).—Examiners must see (1) that the brake connections are perfect and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double piston cylinders should each travel not less than two nor more than four inches. Those of single piston cylinders should not travel less than four nor more than eight inches; (2), that the brake cylinders are perfect and lubricated at least every three months with *mineral oil;* (3), that the hose couplings are united and the cocks in the pipes, except the one at the rear of the last vehicle connected with the brake, are open, that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position; (4), that the joints are all air-tight; (5), that the cocks under the carriages connecting the triple valves with the train pipe are full open, and that the release valves on the brake cylinders are in proper working order, with the cords for opening them attached to the sides of the under frame. Examiners, on the arrival of a train, must ascertain from the driver if any irregularity exists in the working of the brake on the carriages, and take steps to remedy the defect, if there is time, before the train starts again. If it is found necessary to cut off the brake by closing the half-inch cock, the carriage must be at once reported, and sent to the shops on arrival at the terminus for examination.

Shunters and Porters, when making up trains or attaching carriages, must *always open the cock on the brake pipe at the end of each carriage after connecting the hose couplings,* except the one at the hind end of the last vehicle in the train, and *always close them before separating the couplings.*

After uncoupling, the loose ends of the hose-pipes must be secured in the hose clips provided for the purpose.

General.—Before detaching the engine or any carriages, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or cock when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is used again.

If the brakes are applied by the separation of the train or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinders or pipes leading thereto.

If the brakes are applied after the engine has been disconnected, they can be released as above or by again connecting the engine.

The brake of any vehicle can be put out of operation without affecting the others by closing the cock under the vehicle between the brake pipe and triple valve.

No person must tamper with the cock in the brake-van, as by so doing the brake is instantly applied and cannot be taken off again except by opening the cock under each carriage or by attaching the engine to the train.

November 1890.

Appendix to "Instructions to Drivers."

The "Instructions" of November 1890, on the working of the driver's brake valve, refer only to the original and older pattern of valve, and drivers must note that if their engines are fitted with the new equalising brake valve, the following instructions for working it must be carried out instead.

New equalising Driver's Brake Valve.

Instructions for Working.

Always reduce the pressure shown on the gauge not less than 8 lbs. in making the first application of the brakes. The second reduction can be any amount necessary, either large or small.

1st or Release Position.—Push the handle over to the LEFT as far as it will go against the stop.

2nd or Running Position.—Pull out the handle from the first position until it comes up against the first projection it meets with on the rim of the case.

This maintains the proper difference of pressure between the main reservoir and the brake pipe (say 20 lbs.) If any brakes creep on again when the handle is brought too soon to the running position after release, put it back to the release for a few seconds and then return it to the running position.

3rd or Neutral Position.—Move the handle a little further to the right, just over the first projection, until it lies against the other side of it.

This cuts off the connexion between the main reservoir and the train pipe.

4th Position for Ordinary Stops.—Turn the handle further to the right until it lies against the next or the second projection on the rim of the case.

5th Position for Quick or Emergency Stops.—Push the handle over to the RIGHT as far as it will go against the stop.

Positions of Handle.—1. Release: to the left as far as it will go. 2. Running: against the left side of the first projection. 3. Neutral: against the right side of the first projection. 4. Ordinary stop: against the left side of the second projection. 5. Quick stop: to the right as far as it will go.

The small spring-seated feed valve maintaining the extra pressure in the main reservoir must be taken out and wiped clean once a week.

Pilot Running.

When two engines are coupled together, if the second engine is fitted with the new brake valve, the driver of the second engine must close the cock under the brake valve, and place the brake valve handle in the release position and leave it there, the driver of the first engine alone working the brakes.

As soon as the pilot engine is detached, the driver of the second engine should re-open the cock under the brake valve.

January 1891.

The Vacuum Automatic Brake.

This Brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Drivers' Instructions.—Before starting see that your gauge indicates at least 18 inches of vacuum. This is done by admitting steam to the small ejector by means of a steam cock placed for that purpose. To apply the brake move the lever on the combination ejector to "on." In ordinary running this lever must stand at "running position." To release the brake move the lever to position "off." *When the vacuum is suddenly destroyed in the main pipe the brake is full* "on." When separated from your train see that the couplings are placed upon the dummies fixed for that purpose.

Guards' Instructions.—To apply the brake press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is to be only employed in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between carriages are properly coupled together, and that the couplings on the end coaches are placed upon the dummies. See by your gauge that a vacuum of 18 inches is maintained. Report otherwise to driver.

General Instructions.—To release the brakes for shunting purposes (the engine having left the train), first see that the hose coupling at one end of the train is off the dummy, then pull the cord which is fixed under the body of each carriage as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes come off by gravity.

March 1885.

LONDON, TILBURY, AND SOUTHEND RAILWAY.

Instructions as to working the Westinghouse Continuous Brake.

Description.

Compressed air is the agent employed to apply the brake. On the engine there is a donkey pump for compressing air into a main reservoir. There is one 13 in. brake cylinder for the driving wheels, and one 8 in. for each other vehicle. A single line of pipe extends the entire length of the train. On the engine and each vehicle is a triple valve having one connexion with main pipe, and second connexion to a reservoir on each carriage, and a third connexion to the brake cylinder. The pipe from the main reservoir leads to a valve and thence to the train. This valve is operated by the driver, who, by the movement of the handle in one direction, admits air to the main pipe from the main reservoir in order to charge the small reservoirs and release the brakes when they are applied, and by moving it in the opposite direction, discharges air from the brake pipe to the atmosphere, and so applies the brakes. If a train breaks in two, the couplings come apart so as to permit the escape of air and the consequent application of the brakes. Similarly, if the pipe is fractured, the brakes are at once applied.

The operation is as follows:—The pump is started and air is compressed into the main reservoir. When the engine is coupled to the train, air passes into the pipe, triple valve, and reservoir on each carriage, charging all equally.

To apply the brakes, the pressure is lowered in the brake pipe by the driver operating his valve. This causes the triple valve to move so as to open a passage for the compressed air from each reservoir to its brake cylinder, the piston of which applies pressure to the levers and brake blocks.

The brakes are fully set when a reduction of pressure to the extent of 25 lbs., shown by the gauge, has been obtained; any further reduction is a waste of air.

The brakes are released by admitting air from the main reservoir to the brake pipe, which re-charges the pipe and triple valves and reservoirs, whilst at the same time a passage is opened from each cylinder to the atmosphere. A cock is placed between each triple valve and the main pipe, so that the brake on any particular carriage can be put out of use. The brakes of the detached portion of a train, if applied, can be released by holding open a valve on each brake cylinder. These release valves close automatically when not held open to release the brakes. There is a cock in each van to apply the brakes, and a gauge on the engine, and in each van to indicate the pressure in the main pipe; there is also a gauge on the engine to indicate the pressure in the brake cylinder.

Instructions.

Drivers must see:—(1) that the top, or steam cylinder of the air pump is kept well lubricated; (2), that the air cylinder is sparingly lubricated with the lubricator provided for the purpose; (3), that the pump is constantly run, but never faster than is necessary to maintain the required air pressure; and (4), that air from 60 to 65 pounds pressure is carried.

For ordinary stops the brake should be applied lightly, by turning the handle of the driver's valve to the right, and gently closing it again, after a reduction of pressure in the brake pipe of not less than 5 lbs. nor more than 8 lbs. has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working the brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs.; any further reduction is a waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge. The driver, before starting, must ascertain the number of vehicles on the train and the number working with brakes or pipes only.

In releasing the brakes, the handle should be kept in release position until the pointer of the indicator shows signs of rising and then be moved back against the intermediate stop, which is the feed position, where it must remain whilst the train is running.

The driver must always satisfy himself that the brake coupling on his engine is properly connected to that on the train, and that the cocks in the brake pipe, *except the one at the rear of the last vehicle connected with the Westinghouse brake* are open.

The blocks of the driving wheel brake should be so adjusted, by turning the screw, that the pistons travel from 3 to 4 inches.

The driver must be careful to drain the water out of the main reservoir once a week, and in frosty weather more frequently.

If vehicles, having different air pressures, be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train, and in order that the train may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to the train. When coupled to the train, he must put the handle of his brake valve in the release position until the train is charged with air, and this is shown to have taken place when the pointer of the indicator begins to rise. If the brakes on the engine are found to apply themselves when the engine is coupled to a train not charged they should at once be taken off by opening the release valve from the brake cylinders.

After connecting the engine to the train, or after new vehicles have been added, the pipes and reservoirs should be charged as quickly as possible. The brakes should then be applied with full force by the driver, who should not start away until the inspector or guard has signalled that the brakes are acting on all the vehicles.

The driver, before commencing a journey, must inform the guard whether the engine is fitted with the brake apparatus or not, in order that he may know how to act as to the use of the hand brakes.

Should the driver discover any defect in the working of the brake which will render it ineffective, he must at once give the guard notice, and arrange with him as to the use of the hand brake in the van, when necessary.

In running into stations with block ends, and at junctions where he has to stop, and also when moving up to attach his engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of his engine that the ordinary application of the hand brakes on the engine will be sufficient to bring the train or engine to rest. In ordinary stoppages at stations, the driver must use the brakes so as to stop the train without any jerk.

The brakes must not be used with more than half their force, except in cases of emergency.

When working the Westinghouse brake with two engines coupled together, the driver of the leading engine must take charge of the brake, and he must work it as he would on an ordinary train, not considering the second engine, except as a vehicle.

The driver of the second engine must keep his handle in the neutral position, and the donkey pump working; by this means he shuts off all communication from the main reservoir to the main pipe of the train.

The driver, on finding that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the driver's valve towards the right, thus preventing escape of air from the main reservoir.

The driver must enter on his engine ticket all cases of irregularity in the working of the brakes.

Guards.—Before commencing a journey must ascertain from the driver whether the engine is fitted with the Westinghouse brake apparatus or not, and before leaving the terminus, or after adding to a train on the journey, or on another engine being attached, the rear guard must ascertain whether the couplings are connected, and the cocks in the brake pipe are all open (except the one at the rear of the last vehicle connected with the Westinghouse brake) throughout the train by applying the brakes from his van and seeing that *they are released from the engine.* In making this test the pressure of air in the pipes, as shown by the indicator, should not be reduced more than is absolutely necessary. If the Westinghouse brake is not in use on the whole train, or if the guard's van is not the last vehicle, the test should be made by opening the cock in the brake pipe of the last vehicle connected.

A guard, if he should have occasion to apply the Westinghouse brake from his van during the running of the train, must open the tap and allow the air to escape until the train is brought to a standstill, but he should only use the Westinghouse brake in cases of emergency.

In running into stations with block ends, and on approaching junctions where the train may have to stop, the guards must be especially prepared to assist the driver by the ordinary application of their hand brakes to bring the train to rest.

The guards must, in all cases, screw the hand brakes clear off before starting.

The guard must enter, on his report, all cases of irregularity in the working of the brakes.

Examiners (*Locomotive Department*).

Examiners must see:—(1) That the brake connexions are perfect and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double piston cylinders should each travel not less than two, nor more than four inches. Those of single piston cylinders should not travel less than four, nor more than eight inches. (2) That the brake cylinders are perfect and lubricated at least every three months with mineral oil. (3) That the hose couplings are united, and the cocks in the pipes, except the one at the rear of the last vehicle connected with the Westinghouse brake, are open, that is, the handles must stand across or away from the pipe, except the one at the rear of the last vehicle connected with the Westinghouse brake, which must lie along the pipe in the shut-off or closed position. (4) That the joints are all air-tight.

General.—Before detaching the engine or any carriages the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap near its junction with the hose coupling at each end of every vehicle, and these taps must always stand open between each vehicle when the hose couplings are united, and always closed when the hose couplings are not united. After connecting two hose couplings these taps must always be opened, but before separating two hose couplings these taps must always be closed.

The taps are open when the handles stand away from, or at right angles with, the brake pipe, and closed when the handles lie along, or in the same direction as, the brake pipe.

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder or pipes leading thereto. These taps after the release of the brakes must be closed.

If the brakes are applied after the engine has been disconnected, they can be released as above or by again connecting to the engine.

The brake of any vehicle can be put out of operation without affecting the others, by closing the tap under that vehicle, between the brake pipe and triple valve.

No person must tamper with the tap in the brake van, as by so doing the brake is instantly applied, and cannot be taken off again except by opening the cock under each vehicle, or by attaching the engine to the train.

Station masters, inspectors, guards, shunters, and all members of the staff concerned in the working of the trains, must make themselves thoroughly acquainted with the whole of these instructions.

ARTHUR L. STRIDE,
Engineer and Manager.

MERSEY RAILWAY.

VACUUM CONTINUOUS AUTOMATIC BRAKE.

All engines and carriages owned by the Mersey Railway are fitted with this brake apparatus.

This can be applied throughout *the train* by either the driver from the engine or the guard from the brake-van. The engines of the new "Victoria" class are fitted with the vacuum brake, but in engines of the old "Major" class, the apparatus, although *worked* from the engine, does not put on the brakes on the *engine or tender*, a steam brake being supplied for this

purpose, which applies itself automatically whenever the vacuum brake is used, but can also be used independently.

The continuous brake must be used by *the drivers for all stoppages, but the guards must not make use of it* except in cases of absolute necessity, and whenever they do so, a full and special report must be made of all the circumstances, the fact being also noted on their daily report.

The amount of brake power at command depends upon the amount of vacuum obtained, and before starting, the driver must see that the gauge indicates at least 18 inches of vacuum. This is obtained by admitting steam to the small ejector by means of the steam cock provided for the purpose. To apply the brake, move the lever on the brake valve to "ON." In ordinary running this lever must stand at "RUNNING POSITION." To release the brake the lever should be in the position "OFF." When the vacuum is suddenly destroyed in the main pipe the brake is full "ON."

When the guard has occasion (*in emergency only*) to apply the brake he must press down the lever on the valve placed in his van. This admits air throughout the train pipe and the brake is at once applied. The valve in the van opens automatically when the brake is applied violently by the driver and ensures rapid action, but it must, however, not be so applied except in cases of emergency. The guard must see by his gauge that a vacuum of at least 18 inches is maintained; if it falls below this amount he must at once report the fact to the driver.

In the event of a break loose, the continuous brake will be automatically applied, but the guard in the rear van must not rely solely on this, but must put his hand brake hard on and firmly secure it before going back to protect his train.

It is the duty of the fireman, when the engine is attached to the train, to connect the hose coupling on the engine or tank to that on the train; and it is his duty when the engine is detached to place the hose couplings, after disconnecting them, on the respective plugs provided for the purpose. The driver is responsible for this duty being properly attended to by the fireman.

It is the duty of the shunter or porter to connect the hose couplings between the carriages, and to place the hose coupling in rear of the last vehicle on the plug provided for the purpose. The guard is held responsible for this being done. When trains or carriages are placed in the carriage sheds or sidings at the termination of the day's work, the hose coupling at the end of the train or carriage must be taken off the plug, and the driver, before detaching his engine, must put full steam on the large ejector and blow through for at least one minute while the coupling is off the plug. The coupling can be replaced and the engine detached. The carriage foreman at the Central station and the station inspector at the other stations will be responsible for this being carried out.

When empty trains are left in the temporary sidings in the tunnel east of Liverpool Central, or at other places where the gradient is severe, the hand-brakes must be placed hard on before the engines are detached. The guard will be held responsible for this being done.

To release the brakes, after the engine has been detached, the hose coupling at one end of the train must be taken off the plug, the wire fixed under the body of each carriage must be pulled as indicated by the arrows. This admits air to the top side of the cylinder and the brakes fall off by gravity. It is the duty of enginemen in every instance, *before taking their engines out of the shed*, to test the apparatus on both engine and tender, and also when engine is fitted with STEAM BRAKES, whether in addition to the vacuum brake or otherwise, they must be tested with full steam pressure.

Enginemen must always test the continuous brakes, to satisfy themselves that they are in proper working order, after their engines are attached to the trains and immediately before starting.

Drivers must have their trains under such control when approaching terminal stations as will enable them if necessary to stop at the required place, by using only the engine steam brake and guard's hand brake.

METROPOLITAN RAILWAY.

INSTRUCTIONS FOR WORKING THE AUTOMATIC VACUUM BRAKE.

All trains on which this brake is fitted will be controlled by the driver only, except in cases of emergency, such as unusual stoppage or accident to train or engine.

Before starting, the driver must see that the gauge indicates at least 18 inches of vacuum, which must be maintained during the journey. The vacuum is created and retained by admitting steam to the small ejector. To apply the brake move the lever on the combination ejector to "ON." In ordinary running this lever must stand at "RUNNING POSITION." To release the brake move the lever to position "OFF." Before starting with the train the driver is to test the connecting pipes to see if they are properly coupled up, by turning steam into the ejector.

In cases of emergency, or when called by whistle to do so by the driver, the guard will apply the brake by pressing down the lever of valve in van; he will see that all pipes between carriages are properly coupled together, and that the coupling on the rear end coach is placed upon the dummy. He must also see by the gauge in his van that 18 inches of vacuum is maintained, and report, if otherwise, to the driver. The working of the automatic brake by the engineman will not relieve the guards from any responsibility. They must keep a good look out, and be prepared to apply the hand brakes should necessity arise.

In approaching all terminal stations, the train must be completely under control before the engine reaches the platform, so that a careful stop may be made by the hand brake of the engine only, but the guards must be prepared to assist with hand brakes in van if required. Should it be necessary for the driver to use the vacuum brake, a special report must be made detailing the circumstances. When the brake is to be used for ordinary stoppage of trains, it must be done by the driver opening the air valve on the engine gradually, not suddenly or with full force except in cases of emergency.

Shunters, porters, and others when connecting or disconnecting automatic brake pipes, must be careful not to have in their hands waste or anything that may be drawn into the pipes by the action of the vacuum. To release the brake for shunting purposes (the engine having left the train) they must first see that the hose coupling at one end of the train is off the dummy, then pull the chain which is fixed under the body of each carriage. They must also be careful in passing between vehicles not to step upon the brake pipes or interfere with the connections in any way. Whenever the hose pipes between the vehicles are disconnected the couplings must be placed upon the dummies.

JOHN BELL,
General Manager.

General Manager's Office,
32, Westbourne Terrace.
31st August 1892.

METROPOLITAN DISTRICT RAILWAY.

Instructions for working Trains during the Conversion from the Westinghouse Non-Automatic to the Westinghouse Automatic Brake.

General Explanation.

Trains fitted with the automatic brake (hereafter called "automatic trains") can be distinguished by a white cross on the red painted end of the brake compartment, also by having a stop-cock between the iron brake pipe and the india-rubber hose pipe at each end of train, and a stop-cock in a wooden case and an air-pressure gauge in each guard's compartment.

The stop-cocks at the ends of trains next the engine and on the engines next the train must always be opened *after connecting the hose couplings and always closed before separating them.*

For all ordinary stops the brakes of the whole train will be applied and released by the driver from the engine.

If the brakes are applied by the accidental separation of the train or the breaking of a pipe, or from any leakage, they can be released by opening the release valves in the brake cylinder pipes ; the chains by which these are released will be found under and attached to the top footboard of each carriage, where the footboard is notched to indicate their position.

Instructions to Drivers of Engines with Automatic Brakes.

The air in the main reservoir should be maintained at not less than 60 to 65 lbs. pressure.

When the engine is attached to a train the driver must see that the cocks at the ends of the brake pipes between the engine and train *are opened after the hose couplings are connected, the cock at the other end of the engine being kept shut.*

To work Automatic Trains.

After the engine is attached to the train, all the train reservoirs are charged by turning the handle of the driver's brake valve to the first position, with the handle *as far to the left* as it will go, for *about* 10 *seconds;* it is then brought to its second position, which is a very short distance more towards the driver, and it remains there while the train is running.

For ordinary stops the brakes should be applied lightly by turning the handle to the *right* and gently closing it again, after a reduction of the pressure in the brake pipe of *not less than* 5 *lbs. or more than* 8 *lbs.* has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working, the brakes are fully applied when the pressure in the brake pipe is reduced 25 lbs.; any further reduction is waste of air.

The brakes must always be eased off before coming to a dead stop, to avoid jerking the train.

In releasing the brakes the handle must be moved quite against the stop on the left side, *kept there about* 10 *seconds*, and then moved back to the second or running position, and left there until the brakes have again to be applied.

When approaching a terminus or a station where the train has to change engines, the air pressure in the engine main reservoir and in the whole train should be somewhat reduced, say 10 to 15 lbs. The driver of the engine that is to proceed with the train must see that he has the *full pressure* in his main reservoir before the engine is attached to the train.

Neglect of these precautions may cause delay, by the brakes not coming off freely before the train starts with the second engine.

Drivers upon feeling that the brakes have been applied by the guard or automatically *must at once turn the handle to the right,* thus preventing escape of air from the main reservoir.

To work Non-automatic Trains.

When running, the handle of the driver's brake valve must stand to the *right,* and must be gently moved towards the *left* to apply the brakes, and turned back to the *right* to release them, great care being taken not to apply the brakes too suddenly or to jerk the trains when stopping.

Instructions to Drivers of Engines with Non-Automatic Brakes.

The air in the main reservoir should be maintained at not less than 60 to 65 lbs. pressure.

To work Automatic Trains.

When the engine is attached to an automatic train the driver must see that the stop-cock on the brake pipe at the end of the train next the engine *is opened after the hose couplings are connected.*

The train reservoirs are charged with air by turning the handle of the three-way cock, at the back of the fire-box shell, towards the *right,* and it must remain in that position while the train is running.

For ordinary stops the brakes should be applied lightly by turning the handle to the *left* and closing it again gently to the right; it is not necessary to let all the air out of the brake pipe, except in cases of great emergency when a sudden stop has to be made.

The brakes must always be eased off before coming to a dead stop, to avoid jerking the train.

In releasing the brakes, the handle must be moved to the *right,* when the train reservoirs will again be charged, and the brakes will be in the position for running.

When approaching a terminus or a station where the train is to change engines, the air pressure in the engine main reservoir and in the whole train should be somewhat reduced, say 10 to 15 lbs.; the driver of the engine that is to proceed with the train must see that he has the *full pressure* in his main reservoir before the engine is attached to the train.

Neglect of these precautions may cause delay by the brakes not coming off freely before the train starts with the second engine.

Drivers upon feeling that the brakes have been applied by the guard or automatically *must at once turn the handle to the left,* thus preventing escape of air from the main reservoir.

To work Non-automatic Trains.

When running, the handle of the three-way cock must stand to the *left,* and must be gently moved towards the *right* to apply the brakes, and turned back to the *left* to release them, great care being taken not to apply the brakes too suddenly or to jerk the train when stopping.

George Estall,
Locomotive Superintendent.

Lillie Bridge Works,
22nd August 1890.

Special Instructions to Guards of Automatic Brake Trains.

Before leaving a terminus or when another engine is attached to the train, the head guard must ascertain that the hose couplings are connected and that the cocks in the brake pipe between the engine and train are open, by applying the brakes from his own van (by opening the air-cock and closing it again), and seeing that they are released by the driver from the engine.

Previous to starting a train from a terminus the head guard must, in addition, see that the air-cock at the tail end of the train is shut, by the handle being turned up to a vertical position or in a line with the iron pipe.

For all ordinary stops the brakes on the whole of the train will be applied and released by the driver from the engine, but in order to enable the guard at either end of the train to apply the brakes in case of emergency, each guard's brake-compartment will be provided with a stop-cock (enclosed in a wooden case), and either guard can, by opening this stop-cock and allowing the air to escape from the brake pipe, apply the brakes and stop the train. This stop-cock must be closed again before the brakes can be released.

Guards must in all cases screw the hand-brakes clear off before starting, but must observe the air-gauge in their compartment, and be prepared to use the hand-brake if the air-gauge shows that there is no pressure of air in the brake-pipe while running, thus indicating that the air-brake is not in working order.

Chains attached to the release valves in the brake cylinder pipes have been provided for the purpose of releasing the brakes by hand, should they be put on by the accidental separation of the train, or the breakage of a pipe or leakage of air. These chains are attached to the underneath side of the top foot-board of each carriage, and the footboard is notched to indicate their position.

ALFRED POWELL,
Parliament Mansions, S.W., Manager.
22nd August 1890.

MIDLAND RAILWAY.

VACUUM AUTOMATIC BRAKE.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Instructions to drivers. — Before starting from any station, see that your gauge indicates 20 inches of vacuum, and that not less than this amount is maintained during the journey, and while standing at stations.

To apply the brake, open the air valve on the engine.

To release the brake, close the air valve and restore the vacuum to the same amount as existed before the application.

When the engine is attached to the train and the brake pipes are connected, put on the small ejector, and keep it on while at the stations, and during the journey, in order that a constant vacuum may be maintained.

The brake must be applied steadily, which can always be done by opening the air valve gradually; but in a case of emergency the valve must be pulled open suddenly. The large ejector may be used to raise a vacuum rapidly, or when the brake requires to be taken off quickly; but in either case it must be closed gradually.

When stopping the trains under ordinary circumstances, drivers must ease the brake off before finally coming to a stand.

Instructions to guards. — After the engine is attached to the train or when an engine is changed or a pilot engine or any vehicle is attached or detached, the guard in charge must ascertain whether the brake is coupled up and in working order throughout the train, and between the train and the engine. This must be done by lifting the brake valve a *little* in the rear van, when, if there is an inrush of air through the valve, the brake will be all right; but if no inrush takes place, the guard must inform the driver that there is no vacuum in his van.

To apply the brake, lift up the valve, which will admit air throughout the brake pipe, but this is only to be done in a case of emergency. The valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between the vehicles are properly coupled together, and that the coupling is on the stop plug at the rear of the train. See by your gauge that a vacuum of 20 inches is maintained, and report, if otherwise, to the driver.

The needle on the left-hand side of the gauge in the guard's van indicates the amount of vacuum in the brake pipe.

The needle on the right-hand side of this gauge indicates the amount of vacuum in the reservoir.

When the brake is applied fully, the needle on the left-hand side will go to "O," and the needle on the right-hand side will indicate the amount of vacuum holding the brake on.

In the event of a train becoming divided or separated from the engine when going up a rising gradient, the guard must apply his hand brake tightly, and take such other measures as may be necessary to prevent the vehicles from moving.

General Instructions.—Whenever the pipes between the vehicles are disconnected, the couplings must be placed upon the stop plugs at the end of the vehicles.

To couple the hose pipes the porter must take one in each hand and lift them sufficiently high to hook the bottom horns of the couplings together first, and then by lowering them, place the top horns of the couplings in the slots.

To uncouple the hose-pipes the porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate. Porters, when coupling or uncoupling the pipes, must have their hands quite free from cotton waste or anything else that would be likely to be drawn into the pipes by the suction of the vacuum.

In winter, any frozen snow or ice with which the hose pipe, couplings, or plugs, may have become coated, must be cleaned off before attempting to couple them together, so that the india-rubber washers may properly meet each other, and be air-tight.

To release the brake for shunting purposes on vehicles fitted with ball valves (the engine having left the train) first see that the hose coupling at one end of the train is off the stop plug and then pull the release cord or wire which is fixed under the frame of each vehicle, the position of which is indicated by a small white star painted on the sole bars. This admits air to the top side of the cylinder, and the brake comes off by gravity.

When the release wire has to be pulled for the purpose of taking the brake off, it must always be held by hand until the brake comes off, and must never be fastened over.

Whenever the vacuum automatic brake pipes are not connected with each other, they must be placed upon the stop plugs at the ends of the vehicles.

When vehicles fitted with continuous brakes are placed in sidings, the continuous brakes must, in all cases, be released, and when it is necessary that a brake should be applied for the purpose of keeping the vehicles from moving, the ordinary hand brakes must be used.

VACUUM AUTOMATIC BRAKE LEVERS IN GUARDS' VANS.

Guards and others concerned must take care that articles are not placed in guards' vans in such a position as to be liable to come in contact with the brake lever.

Westinghouse Automatic and Continuous Air Brake.

Description and Instructions for Working.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train are fitted with the following parts:—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston rods; the latter in connection with (4) the brake lever and blocks. Upon the engine a main reservoir also is fitted.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle, but in the main reservoir the pressure is about 10 lbs. in excess of that in the train.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top, or steam cylinder, is kept well lubricated, (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum—*tallow or oil must not be used in the air cylinder*—(3) that the pump is *constantly run*, but never faster than is necessary to maintain the required air-pressure, and (4) *that air from 50 to 60 lbs. pressure for stopping trains and from 70 to 80 lbs. pressure for express trains*, is carried.

For ordinary stops the brake must be applied lightly, by opening the valve, and closing it gently when the pressure has been reduced from 4 to 8 lbs. on the gauge.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

In releasing the brakes the handle must be moved quite against the stop and kept there for about ten seconds, and then moved back against the intermediate stop, which is the feed position, *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake valve towards the right, thus preventing the escape of air from the main reservoir.

The blocks of the driving wheel brake must be so adjusted by turning the screw that the pistons move up from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time.

If vehicles having different air pressures be coupled together the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes on the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train, and then put the handle of his brake valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged they must be at once taken off by opening the release valves from the brake cylinders.

Guards.—After making up a train, after attaching or detaching any vehicle, or after another engine has been attached, the rear guard must ascertain whether the couplings are connected, and the cocks in the brake pipe are all open throughout the train, by applying the brakes from his van, and seeing that *they are released from the engine.* If the brake is not in use on the whole train, or if the van is not the last vehicle, the test must be made by opening the cock in the brake pipe of the last vehicle connected.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they must only use the brake in case of emergency. The tap in the van must again be closed when the train has come to a stand.

The pressure gauge in the van must be observed.

Guards must, in all cases, screw the *hand-brakes clear off* before starting.

General.—Before detaching the engine or any vehicle, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which must be open when the hose couplings are united, except the one in the rear of the train. *These taps must always be opened after connecting the hose couplings, and always closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the release valve in the pipe leading to the brake cylinder. This is done by pulling the cord under the frame of each vehicle, the position of which is indicated by a small white triangle painted on the sole bars. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brake of any vehicle can be put out of operation without affecting the others, by closing the tap under that vehicle between the brake pipe and triple valve.

Care must be taken (1) that the brake connections are perfect, and properly adjusted for the wear of the blocks and wheels, by being *uniformly* taken up. The pistons of the double piston cylinders should each travel not less than two nor more than four inches; and those of the single piston cylinders should travel not less than four nor more than eight inches; (2) that the brake cylinders are perfect, and lubricated at least every three months with *mineral oil;* (3) that the hose couplings are united and the cocks in the pipes are open, that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position; and (4) that the joints are all air-tight.

When there are upon a train any vehicles fitted with the Westinghouse brake, and that brake is not in use upon such vehicles, the handle of the tap at each end of each vehicle must be placed across or away from the pipe in order that the brake may be applied and the air let out of the main pipe; the air must then be allowed to escape from the cylinder by means of the release tap under the vehicles. This is necessary to avoid the brake leaking on and delaying the trains.

To enable the staff to readily ascertain whether the vehicles supplied with the Westinghouse brake pipe are fitted with the brake apparatus, or with the connecting pipes only, the cock at each end of all vehicles having connecting pipes only has been painted red.

NORTH-EASTERN RAILWAY.

The Westinghouse Automatic Brake.

Description.

General Principle of its Action.

Compressed air is the power employed to work the brake. The air, compressed by an air pump on the engine into a main reservoir, flows through the driver's brake valve into the main brake pipe, which extends the whole length of the train, and fills under each carriage a small reservoir by means of the triple valve attached to it. Each triple valve is also connected to a brake cylinder. As soon as the pressure in the brake pipe is lowered the triple valve piston under each vehicle is moved down by the greater pressure above it, stored in the small reservoir, and this pressure passes instantly into the cylinder, forces out the piston and rod, and thus causes the blocks to press against the wheels.

The brakes are released by an increase of pressure in the main pipe, produced by allowing air to pass from the main reservoir along the train. This moves up the triple valves, recharges the small reservoirs, and at the same time allows the air which had passed into the cylinders and forced out the pistons, to escape into the atmosphere.

Instructions as to its Proper Working.

Drivers.—The top or steam cylinder of the donkey-pump must be kept well lubricated with the best olive oil, by means of the lubricator only.

The small oil cup on the air cylinder must be filled once a week (and then only when the cylinder is cool) with paraffin. No other lubricant must be used.

The steam valve in communication with the donkey-pump must first be opened slightly until a small pressure of air is obtained, and then kept fully open whilst the engine is on duty. A governor is attached to the pump for the purpose of checking it when the standard pressure of 60 lbs. is obtained in the main pipe.

N.B.—The steam valve to the pump must only be shut off when oil has to be put into the lubricator.

The main reservoir must be drained once a week, and in frosty weather more frequently. The drip cup must be drained at least once every two days.

Pistons in short cylinders must not travel less than 2, or more than 4½ inches, and those in long cylinders not less than 3½ or more than 7 inches.

The driver is responsible for the connections between the engine and the first vehicle being perfect, and the cocks on the main pipe open.

Before and when attaching to a train the driver must see that his brake handle is in the feed position, and that he has the maximum pressure of air (60 lbs.) allowed in his main pipe, and that the tap below the driver's valve is open.

After the engine has been attached to the train (and also whilst standing at stations) the driver must keep his handle in the feed position so that whatever reductions are made by attaching, or the guard testing the train, he may be able to release the brakes when he gets the signal to start.

The driver must not put his handle into release position until after he receives the signal to start, and should the engine and tender brakes be on, the driver must release them by the cocks provided for that purpose.

When two or three attachments are to be made, the driver must be careful to put only a low pressure of air into the first and second portions, and after the third or last portion has been attached he must keep his handle in neutral position until he gets the signal to start; he must then place his handle in the release position and leave it there until the gauge shows a gradual increase of pressure.

To apply the brake the driver must lightly turn his handle to the right ("brake on" position) allowing not less than 5, or more than 8 lbs. of air to escape, and then gently close the valve again by placing the handle in neutral position. Should it be necessary for a driver to apply the brake immediately after releasing it, he must make a greater reduction from the main pipe than he did when first applying it. In fact he must allow the air to escape until he feels that the brakes are applied.

A reduction of 25 lbs. applies the brake with full force, but in cases of emergency the handle must be brought against the "brake full on" stop, and kept there until the train comes to rest.

If after a reduction has been made, the pressure runs up on the gauge, it shows the outflow of air has been too suddenly checked, and that probably some, if not all the brakes have come off again.

The driver's handle must not be put into release position before applying the brake, as it destroys the reserve pressure.

To avoid skidding the wheels, great care must be taken to apply the brake lightly for ordinary stops.

When stopping at stations the brake must be so applied that the train will be brought to rest without rebounding.

To release the brake the driver's handle must be put quickly over into release position, and kept there until the gauge shows a gradual increase of pressure, which indicates that the train is equally charged throughout; the handle must then be brought back into feed position.

The driver of a train running direct or backing into a platform with a buffer-stop at the end or to a platform where another train is standing, must do so cautiously, and at a proper distance from the place where the train has to come to a stand must test the continuous brake, and then run forward under the control of the hand brake only, not using the continuous brake except in case of emergency.

When approaching any principal station or junction where the train has to stop, and also when moving up to attach the engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of his engine that the ordinary application of the hand brakes on the engine and tender will be sufficient to bring the train or engine to rest.

When working the brake with two engines coupled together, the driver of the leading engine must take charge of the brake, and work it as he would on an ordinary train, not considering the second engine except as a vehicle. Should the leading driver find any difficulty in getting the brake to go on, he should at once put his brake-handle into full on position and keep it there until the train comes to rest.

The driver of the second engine must shut the tap, which is fixed under the driver's valve, thus closing all communication between his main reservoir and train pipe, and this tap must be kept closed, and the brake handle kept in the neutral position until the first engine is uncoupled from the train, or it is necessary for him to apply the brake. Should, however, the second engine be fittted with the equalising driver's brake valve, the handle must be kept in full release instead of neutral position.

When the second engine has not a tap below the driver's valve, the driver must put his handle into neutral position and keep his pump working.

Should it be necessary for the driver of the second engine to apply the brake he must bring his handle into full on position and keep it there until the train comes to rest, but the tap below the valve must not be opened.

Should the leading engine be detached, the driver of the second engine must then take charge of, and work the brake in the usual way, but before he opens the tap, he must make himself sure that his main reservoir has been fully charged with the maximum pressure of air.

Should the driver discover any defect in the working of the brake which would render it ineffective, he must at once give the guard notice, and arrange with him as to the use of the hand-brake in the vans, if necessary.

The driver on finding that the brake has been applied by the guard, or automatically, must at once aid in stopping the train by putting the brake handle into neutral position, thus preventing any escape of air from the main reservoir.

Drivers must immediately report any failure or irregularity in the working of any part of the brake apparatus.

Drivers must be careful to prevent oil or grease coming in contact with the hose pipes and other rubber connections and, when coupling the hose, must not bend one pipe more than the other.

Drivers will be held responsible for any unreported defect in the brake apparatus on any engine of which they may have had charge.

The Westinghouse brake on goods engines must only be used when working passenger trains.

Guards.—Before starting a train from a terminus, or from any place where an attachment or detachment has been made, guards must see that all the brake couplings are properly connected and the taps on the swan necks open; to ascertain that this is the case they must make a reduction of not less than 5 or more than 8 lbs. of air, by opening the tap in the van, but should the van not be the last vehicle the reduction must be made from the rear tap of the train.

This test must be made as soon as possible after the train has been made up.

When a guard has occasion to apply the brake from his van, he must open the tap provided for that purpose and allow the air to escape until the train is brought to rest. Any sudden opening or closing of the tap is likely to cause damage to the train. The guard must only apply the continuous brake in cases of emergency.

Guards must see that the taps in each van, and at the rear of the last vehicle of their train are shut before the engine is attached, so as to avoid any waste of air-pressure.

Guards must in all cases screw the hand-brake clear off and chain it before starting.

Each guard of the train must be on the look-out, and must make use of his hand-brake to assist the driver in stopping, and must also apply the continuous brake in case of emergency.

Guards must enter on their reports all cases of irregularity in the working of the brake, giving at the same time the number and description of the vehicle at fault, the number of the engine working the train, and when possible the nature of the failure.

The head guard of a train fitted with the Westinghouse brake, must, before starting, and at places where engines are changed, inform the engine driver what number of vehicles there are on the train, and must keep him advised when from any cause the brake cannot be worked upon the whole of the vehicles composing the train.

Carriage Brake Inspectors.—The carriage brake inspectors must see that the brake connections are perfect, the hose couplings properly united, and the cocks on the pipes open, except that at the rear of the last vehicle.

The brake blocks must be uniformly adjusted, so that the pistons of the brake cylinders do not travel too far, and all joints must be kept tight.

The brake cylinders, triple valves, and other parts of the brake apparatus must be carefully inspected, and attended to when necessary.

The carriage brake inspectors should see that the brake is in good working order on all vehicles of a train, by having the brake applied and released from the engine, and must inform the driver of the number of vehicles in the train on which the brake can be worked, and also the number of "piped" vehicles.

Brake Fitters.—When any part of the brake apparatus on an engine is reported by the driver as being out of order, the shed brake fitter must have it attended to, and the brake tested before the engine goes out again.

The brake apparatus on engines and tenders in regular working must be thoroughly examined by the shed brake fitters at least once a month, and on spare engines twice a month.

General.—Firemen, guards, shunters, and others who may detach an engine or vehicles from a train must first observe that the brake has been released from the engine, otherwise they will have to release the brake by hand, by pulling the wire attached to the release valve under each vehicle.

The tap at each end of every vehicle in a train, except that at the rear end of the last vehicle, must be opened directly after the hose couplings have been united; and before the pipes between any two vehicles are disconnected, the tap on each side must be closed.

Should it be necessary to put the brake out of operation on a vehicle, this must be done by closing the tap between the main pipe and triple valve under the vehicle. The 1-in. tap at the end of the main pipe must not be closed (unless there is a defect in the main pipe or couplings) as communication between the engine and those vehicles in the rear of the tap thus closed would thereby be stopped.

No person must be allowed to tamper with any of the taps in the train.

Hose couplings must not be pulled apart, but must be uncoupled by hand in the proper way.

H. Tennant,

York, July 1890. *General Manager.*

Vacuum Automatic Brake.

General Description.

This brake stops the train by the application of brake blocks to the tyres, in the same way as the ordinary hand brake. The levers, however, which apply the blocks, are moved by a piston, working in a cylinder, this piston deriving its power from the pressure of the atmosphere.

The brake is continuous, each vehicle carrying its own brake cylinder connected to a pipe, running from end to end of the train, and it is through this pipe that the action of the brake cylinders is controlled.

An ejector placed upon the engine exhausts the air out of the continuous pipe and each cylinder. The brake is applied by the admission of air into the train pipe, and released by the withdrawal of the same through the ejector.

The brake can be applied by the guard, and is self-acting in the case of an accidental parting of the train, or any damage happening to the brake itself.

Instructions as to its proper Working.

Drivers.—The ejector handle must first be placed in the "running" position, as marked on the disc; the steam valve attached to the boiler must then be opened and kept open as long as the brake is in use.

The small ejector steam cock must next be opened, gently at first, and then sufficiently to obtain at least 18 inches of vacuum. When the engine is attached to a train, this cock requires to be regulated, as to open it too much or too little will prevent the ejector making the required amount of vacuum.

The steam valve must be closed before lubricating the steam disc, which must only be done by unscrewing the small oil screw on the top of the ejector.

When the engine is working by itself the driver must see that each coupling is placed on the dummy plug near it, and when attaching to a train, that the pipes between the engine and first vehicle are properly coupled.

Before attaching or detaching vehicles, drivers must in all cases destroy the vacuum, by putting the brake full on, as otherwise the couplings cannot be separated or taken off the dummy plugs.

Drivers must move the handle gently in the direction marked "on" until from 5 in. to 10 in. of vacuum is destroyed, as shown by the gauge: this will apply the brakes with gentle force to the wheels. The

pressure of the blocks on the wheels can be increased by letting more air into the main pipe, or decreased by bring the handle into such a position as to cause the small ejector to increase the vacuum.

Should the engine be fitted with the apparatus for working the brake on the train only, the Westinghouse brake must be applied on the engine before the vacuum is applied on the train.

In cases of emergency the handle must be put right over into "on" position and kept there until the train comes to rest.

To avoid skidding the wheels, great care must be taken to apply the brake lightly for ordinary stops.

To release the brake the handle must be put into "running" position, but should this not be rapid enough the handle must be pushed in the direction marked "off," and so admit steam to the large ejector, which creates vacuum more quickly.

When stopping at stations, the brake must be so applied that the train will be brought to rest without rebounding.

The driver of a train running direct or backing into a platform with a buffer-stop at the end or to a platform where another train is standing must do so cautiously, and at a proper distance from the place where the train has to come to a stand must test the continuous brake and then run forward under the control of the hand-brake only, not using the continuous brake except in case of emergency.

When approaching any principal station or junction where the train has to stop, and also when moving up to attach the engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of his engine that the ordinary application of the hand brakes on the engine and tender will be sufficient to bring the train or engine to rest.

When working the brake with two engines coupled together the driver of the leading engine must take charge of the brake, and work it as he would on an ordinary train, not considering the second engine except as a vehicle.

Should the leading driver find any difficulty in getting the brake to go on, he should at once put his brake handle into "on" position and keep it there until the train comes to rest, according to the latter clause of Rule 5.

The driver of the second engine must keep the steam shut off from his ejector, and place the handle in "running" position, where it must remain so long as the brake is worked from the leading engine.

Should it be necessary for the driver of the second engine to apply the brake, he must put the handle right over into "on" position, and keep it there until the train comes to rest.

Should the leading engine be detached, the driver of the second engine must take charge of the brake and work it in the usual way.

Should the driver discover any defect in the working of the brake, which will render it ineffective, he must at once give the guard notice and arrange with him as to the use of the hand brake in the vans, if necessary

The driver must see that the engine brake is kept properly adjusted, and must immediately report any failure or irregularity in the working of any part of the brake apparatus.

Drivers must be careful to prevent oil or grease coming in contact with the hose pipes, and other rubber connexions, and, when coupling the hose, must not bend one pipe more than the other.

Drivers will be held responsible for any unreported defect in the brake apparatus on any engine of which they may have had charge.

Guards.—Before starting from a terminus, or from any place where an attachment or detachment has been made, the guard must see that all the brake couplings are properly connected, and that the coupling at the rear of the last vehicle has been placed on the dummy plug provided for the purpose; he must also look at the gauge in the rear van, and see that it registers not less than 18 inches of vacuum.

When the guard has occasion to apply the brake from his van he must press down the handle of the valve and keep it open until the train comes to rest, but this must be done carefully, as a sudden opening of the valve may cause damage (the valve opens automatically when the brake is applied suddenly by the driver, and insures rapid action). The guard must only apply the continuous brake in cases of emergency.

Guards must in all cases screw the hand brake clear off and chain it before starting.

Each guard of the train must be on the look-out and must make use of his hand-brake to assist the driver in stopping and must also apply the continuous brake in case of emergency.

Guards must enter on their reports all cases of irregularity in the working of the brake, giving at the same time the number and description of the vehicle at fault, the number of the engine working the train, and when possible, the nature of the failure.

The head guard of a train fitted with the vacuum automatic brake must before starting, and at places where engines are changed, inform the engine driver what number of vehicles there are on the train, and must keep him advised when from any cause the brake cannot be worked upon the whole of the vehicles composing the train.

Carriage Brake Inspectors.—Carriage brake inspectors must see that the brake connexions are perfect, that the hose couplings are properly united, and that the hose pipe at the rear of the last vehicle is placed on the dummy plug provided for that purpose.

The brake blocks must be uniformly adjusted, so that the pistons of the brake cylinders do not travel too far, and all joints must be kept tight.

The brake cylinders, ball valves, and other parts of the apparatus must be carefully inspected and attended to when necessary.

The carriage brake inspector should see that the brake is in good working order on all vehicles of a train, by having the brake applied and released from the engine, and must inform the driver of the number of vehicles in the train on which the brake can be worked, and also the number of "piped" vehicles.

Brake Fitters.—When any part of the brake apparatus on an engine is reported by the driver as being out of order, the shed brake fitter must have it attended to and the brake tested before the engine goes out again.

The brake apparatus on engines and tenders in regular working must be thoroughly examined by the shed brake fitters at least once a month, and on spare engines twice a month.

General.—Firemen, guards, shunters, and others, who may have to detach an engine or vehicles from a train must first see that the brake is applied with full force by the driver, otherwise they will find great difficulty in separating the hose couplings.

When a train or vehicles have been detached from an engine, the disconnected coupling must not be placed on the dummy plug until all the brakes have been released, which must be done by pulling the wire (at either side of the vehicle) attached to the release valve.

After the brakes have been properly released the coupling must be placed on the dummy, as this keeps the internal parts free from dirt, &c.

H. TENNANT,
General Manager.

York, July 1890.

NORTH LONDON RAILWAY.

INSTRUCTIONS FOR WORKING THE VACUUM AUTOMATIC BRAKE.

The Brake can be applied throughout the Train by the Driver from the Engine, or by the Guards from either Van.

Engine drivers.—Before starting, the driver must see that the gauge indicates *at least* 20 *inches of*

vacuum, and that not less than 18 inches is *maintained* during the journey and while standing at stations. The vacuum is created by admitting steam to the small ejector by means of the steam valve on combination ejector.

The small ejector must be kept at work *continuously* to maintain the vacuum.

To apply the brake, move the handle on combination ejector in the direction marked "*Brake on.*"

To release the brake, move the handle in the direction marked "*Brake off.*"

In ordinary running this handle must stand at "*Running position.*"

The small ejector steam-valve must not be closed without first destroying the vacuum, by applying the brake.

The ejector drip pipe, and the drip valve on train pipe, must be kept clear and free from dirt.

When in the shed, the hose and train pipe under the engine should be examined, and if water is found within, it is a sign that the back stop valves in the ejector require attention.

The driver's vacuum gauge has two pointers, the one on the left marked "*Train pipe*," and the one on the right "*Vacuum chamber*," both indicating the vacuum carried.

A drip trap is placed at the lowest part of the train pipe, so that any moisture may drain into it. The valve at the bottom of this trap must be examined and cleaned every shed day.

Should the small ejector alone fail to maintain 20 inches vacuum the driver must report it, and call the attention of the shed foreman, who must put it right before the engine again goes out.

The driver must see that all hose-pipes between the carriages and the engine are properly coupled together, and that the coupling on the rear van is placed on the plug when the engine is detached.

Guards.—When the guard has occasion to apply the brake, he must press down the handle on the valve placed in the van. This admits air throughout the train pipe, and is only to be employed in *cases of emergency*. The valve in the van opens automatically when the brake is applied *suddenly* by the driver, and ensures rapid action. *Before starting* his train the guard must see, by the gauge in his van, that a vacuum of 20 *inches is maintained*, or report otherwise to the driver.

He will also be responsible (with the engineman) for seeing that all the hose-pipes between the carriages and the engine are properly coupled together, and that the coupling on the rear van is placed on the plug when the engine is detached, and also before starting the train.

The front guard must see that the hose-pipes between the front brake van and the engine are attached before starting the train.

In the event of a train parting, the guard in the rear portion must at once apply his hand brake, and keep it tightly on until the train is again coupled to the engine.

If the guards find it necessary to call the driver's attention to the fact that the vacuum is below 18 inches, they must do so by slightly applying the brake. This will immediately call the driver's attention to the state of the vacuum gauge.

Empty Trains Standing in Sidings.

After a train has been shunted and the train pipe detached from the engine, the wire under each coach must be pulled by the guards to allow the brake to run off; the train pipe coupling must then be replaced on the block, in order to exclude damp from the train pipes and cylinders.

This order does *not* apply to empty vacuum trains stabled in Devons Road sidings, which are under the care of the Carriage Department men as heretofore.

General Instructions.

To release the brake for shunting purposes (the engine having left the train), first see that the hose-coupling at one end of the train is off the plug, then pull the wire or cord fixed under the frame of each carriage. This admits air to the top side of the cylinder, and the brakes fall off.

To couple the pipes take one in each hand and lift them sufficiently high to hook the bottom horns of the couplings together first, and then by lowering them, place the top horns of the couplings in the slots.

To uncouple the pipes simply lift them straight up, when the horns at the top will come out of the slots and the couplings separate.

See that all the pipes, joints, and couplings are air-tight, that the levers are regularly adjusted (to allow for the wear of the blocks), and keep the blocks clear of the wheels.

See that the piston rods are kept clean. This should be done by wiping with a dry cloth. *No oil or grease must ever be used.*

Should the brake on any vehicle become disabled, or the piston stick, disconnect the piston rod of vacuum cylinder by removing the pin of brake shaft lever.

In the event of failure of the vacuum brake *on the engine*, the driver must at once whistle in the usual way for the brake, when it will be the duty of either guard (or both) to apply and hold down the vacuum brake handle in the van until the train is brought to a stand.

G. Bolland Newton,
General Manager.

Broad Street Station,
March 18th, 1892.

NORTH STAFFORDSHIRE RAILWAY.

Instructions for Working the Automatic Vacuum Brake.

The automatic vacuum brake is continuous throughout the train, each vehicle carrying its own brake power. Should a train fitted with this brake become divided when running, the disconnections of the hose-pipe will cause the brake to go on throughout each portion of the train.

The brake power available depends upon the amount of vacuum maintained by the driver, and not less than 18 inches vacuum must be maintained in the rear van of the train whilst in motion.

The brake is applied by the driver admitting air to the main train pipe, and this can also be accomplished in case of emergency by the guard pressing down the lever of the valve fixed on the iron pipe in the van.

When a sudden application of the brake is made by the driver the valve in each guard's van will open automatically, thereby admitting air to the main train pipe, thus ensuring a rapid application of the brake.

There is a gauge in each guard's van showing the amount of vacuum in the train pipe and in the reservoir underneath each carriage.

The brake is released by the driver re-creating the vacuum throughout the train, and when the engine is detached the brake can be released by pulling the wire which will be found underneath the carriage frame, and which must be held back until the brake is fully off. Care must be taken to see that the hose-pipe is taken off the plug at one end of the train.

Whenever the pipes between the vehicles are disconnected the couplings must be placed on the plug at each end of the vehicles.

The engine having been hooked on to the train, and the hose couplings between the tender and the train, also those between the coaches connected, and the one at the end of the train placed upon the plug, the driver will admit steam to the large or small ejector to exhaust the train pipe and cylinders to a vacuum of 22 inches, which must be maintained throughout the journey and whilst standing at stations, the small ejector only being used in case of the air pump failing to act.

To apply the brake, the driver admits air to the train pipe by opening the brake-valve.

To release the brake the driver will close his brake-valve and admit steam to the large or small ejector.

When the brake is applied, the pressure of the brakes on the wheels may be increased or diminished at pleasure without removing them, and also without reducing the full reserve power which is always at command for an emergency stop.

Station stops should not be made by violent application of the brake, but by a destruction of vacuum of from 5 to 10 inches, which should be re-created slowly as the train comes to a stand, in order to prevent jerking at the end of the stop.

To apply the brake quickly the driver must open the brake-valve to the full extent.

The guard can apply both the steam and vacuum brakes by pressing down the handle of the valve placed in the van, but this must only be done in extreme cases of emergency.

The guard must see whilst running or standing at stations that a vacuum of at least 18 inches is maintained in the van, or report otherwise to the driver.

It will be the duty of the guard to see that the couplings between the carriages are properly connected, and that the coupling of the last coach is placed on the plug.

To release the brake for shunting purposes (the engine having left the train) first see that the hose coupling at one end of the train is off the plug, then pull the wire underneath the frame of each carriage which must be held back until the brake is fully off.

In approaching terminal stations, stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, at which the train has to stop, enginemen must test the continuous brake before passing the distant signal and the speed of the train must be reduced by it; and the engine must always enter such stations (or a dead end bay at any station) at such a speed as to enable them to stop the train at the proper place by the application of the ordinary hand brake only, and the automatic vacuum brake or steam brake must only be used in cases of emergency. Guards must watch the speed of the train and assist the engineman by the use of the hand brake when necessary. Unless the continuous brake is working properly when thus tried, the engine driver must whistle for the guard's hand brake, and inform the guard as early as possible that the continuous brake is out of order, and the hand brake must be relied upon for working the train. Special care must then b taken in approaching stations at which the train has to stop.

In the event of a train parting, the guard in the rear portion must at once apply his hand brake, and keep it tightly screwed on until the train is again coupled to the engine.

Each van is fitted with a hand brake, to be applied by the guards, in case the vaccuum brake fails.

The vacuum brakes throughout the train being under control of the driver, the use of the "*hand brake*," in the vans is not required in making an ordinary stop. But guards must be prepared to apply the "*hand brake*" immediately on its being called for by the driver's whistle.

The driver will before starting from a terminal station, and also before leaving any station where a vehicle has been attached or detached to the train, test the vacuum brake, and the guard in charge of the rear van must see that the indicator in his van shows not less than 18 inches of vacuum, and signal the driver that it is so, by *shewing him* a *white flag by day* and a *white light by night*, which must be repeated by the driver giving a *hand signal* to the Guard by day, and showing him a *white light by night*.

SOMERSET AND DORSET JOINT RAILWAY.

Working of Vacuum Automatic Brake.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Drivers' Instructions.—Before starting, see that your gauge indicates 20 inches of vacuum. This is done by admitting steam to the small ejector by means of a steam cock placed for that purpose. The small ejector must always be kept working, whether the engine is attached to a train or not. To apply the brake, move the lever on the combination ejector to "*brake on.*" In ordinary running, this lever must stand at "*running position.*" To release the brake, move the lever to position "*brake off,*" and restore the vacuum to the same amount as before the application. When the vacuum is suddenly destroyed in the main pipe, the brake is full "*on.*" When separated from your train, see that the couplings are placed upon the dummies fixed for that purpose, and when attached to a train, that the pipes between the engine and the next vehicle are properly coupled up.

Guards' Instructions.—To apply the brake, press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is only to be employed in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between the carriages are properly coupled together, and that the couplings on the end coaches are placed upon the dummies. See by your gauge that a vacuum of 17 inches is maintained. Report otherwise to the driver.

General Instructions.—To release the brakes for shunting purposes (the engine having left the train), first see that the hose coupling at one end of the train is off the dummy, then pull the cord which is fixed under the body of each carriage as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes come off by gravity.

Notice to Enginemen and Firemen.

Testing of Brake Apparatus on Engine and Tender.

It is the duty of enginemen in every instance, before taking their engine out of the shed, to test the brakes on both the engine and tender, as directed below, so as to satisfy themselves that they are in efficient working order.

Automatic Vacuum Brake.

Before leaving the shed or starting on a journey, the driver must test the action of both the large and small ejector, each in its turn separately, and satisfy himself that the joints of the pipes on the engine are tight, and the ejectors in working order. Should the fall of vacuum be very rapid, the joints must at once be examined to discover the leakage, and in order to draw out any water that may have accumulated in the engine or tender brake pipes, the engineman, both before leaving the shed and on his return at the end of his day's work, must take off the hosepipe coupling from the dummy and use the large ejector freely, which can be done by putting the handle over to "On." All drain valves and pipes in connection with the brake apparatus must be kept free and in working order.

Enginemen must always test the continuous brakes, and ascertain for themselves if they are in good

working order when the engines are coupled up to the train, and immediately before starting on a journey.

S. W. JOHNSON,
Derby, Loco. Superintendent.
12th August 1885.

SOUTH-EASTERN RAILWAY.

General Instructions applying to trains worked by either Continuous Brake.

Certain trains, as may be arranged, are now fitted with continuous air brakes, applied from the engine. The working of these by the engineman will not relieve the guards from any responsibility. They must keep a good look-out, and apply the hand brakes should any necessity arise, as if the trains were not fitted with the continuous brake.

Brake vans and carriages which are fitted with the continuous brake apparatus must be kept for use in the continuous brake trains, or as through carriages in branch trains in connection with the continuous brake trains, and any spare brake vans and carriages which are fitted with the continuous brake apparatus must be worked up to Rotherhithe road carriage depôt.

When vehicles fitted with a continuous air brake are left in sidings or at stations, the brake pipes of each vehicle must be coupled together, and not left hanging loose. Porters and others are cautioned that in passing between vehicles *they must not step upon the brake pipes*, nor in any way interfere with the connections.

The hand brakes are always to be applied by the guards whenever the train is stopped by signal, or at any intermediate station other than where appointed to call.

Station masters, inspectors, and foremen must give special attention to the proper coupling of the continuous brake pipes, and make such arrangements as will prevent these pipes being in any way improperly used.

The guards *must see* that the pipes of the continuous brakes on their trains are properly coupled together *before starting*, and whenever any engine or vehicle is attached or detached ; and they must, frequently during the journey, examine the pipes and ascertain they are in good order, and remain properly coupled together.

Guards are required to enter on their journals *whether their trains were worked with the continuous brake*, stating whether vacuum or automatic, also give full particulars of any defect, failure, or unsatisfactory working of the brake of their trains, or any portion of the fittings, couplings, &c.

Drivers must not depend on the brake until they have tested and found it to work properly. For this purpose they will test the brake before starting and also wherever the engine is changed. Engine drivers must, before passing the distant signals for stations where the train has to be stopped, or at STATIONS *and* JUNCTIONS WHERE THE SPEED HAS TO BE REDUCED, *try the brake to see that it is in good working order. Occasionally during the journey, and when descending sharp inclines, the continuous brake must be tried by the engine driver to ensure it being in perfect working order.*

At terminal stations the ordinary stopping must be done by the hand brakes, and the vacuum brake only used by the driver when he sees that the hand brakes will fail to stop the train at the proper place. No train must be allowed to travel between the distant signal and any terminal station at a higher rate of speed than will admit of the train being stopped by the hand brakes.

Except in case of emergency, the "vacuum" brake must not be used for stopping the tidal trains when running from the main line to the Folkestone Harbour branch at Folkestone, or when running trains to the Admiralty pier at Dover. The train must be brought to a stand-still by the hand brakes.

Trains fitted with the automatic brake standing in sidings.—During frosty weather, the automatic brake upon all trains when placed in sidings must be released.

CALEDONIAN RAILWAY.

Description and Instructions as to the working of Continuous Automatic High-pressure Air Brakes for Passenger Trains.

THE WESTINGHOUSE SYSTEM.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each vehicle of the train is fitted with the following parts :—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston-rods ; the latter in connection with (4) the brake lever and blocks. Upon the engine a main reservoir also is fitted.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle, but in the main reservoir the pressure is about 10 lbs. in excess of that in the train.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valve to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, re-charges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top or steam cylinder is kept well lubricated ; (2) that the air cylinder is sparingly lubricated with a small quantity of paraffin *—tallow or oil must not be used in the air cylinder ;* (3) that the pump shall be *constantly run*, but never faster than is necessary to maintain the required air pressure ; and (4) *that air of 75 lbs. pressure is carried.*

For ordinary stops the brakes should be applied lightly by turning the handle of the driver's valve to the right, and gently closing it again, after a reduction of pressure in the brake pipe of not less than 5 lbs. nor more than 8 lbs. has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly. Just before coming to a stand the brakes should be released, so as to avoid any jerk.

Drivers must exercise care and moderation in applying the brakes for ordinary stops, so as to bring their trains to rest without inconvenience to the passengers, and the brakes must not be used with more than half their full force, except in cases of emergency.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air. *In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.*

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge.

In releasing the brakes the handle must be moved quite against the stop, and kept there for about *ten seconds*, and then moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake valve towards the right, thus preventing escape of air from the main reservoir.

Drivers and firemen are *at all times* responsible for having the couplings between the engine and the first vehicle of the train properly connected, and for seeing that the cocks in the brake pipe are open; and before starting, and at intermediate stations where the composition of the train has been altered, they must ascertain from the guard the number and position of the brake-fitted vehicles connected with the engine, and be guided on the journey in the application of the brake accordingly. Also, before attaching to a train, the air must be raised to the full pressure at which it is to be worked during the journey, and, after attaching, the brakes must be applied with full pressure and taken off, in order to properly test the several pipes and connections. This operation to be repeated after the guard tests the brake from the van, to ensure all the brakes coming properly off.

Drivers must be careful to drain the water out of the main reservoir and drip cup once a week, especially in winter time.

If vehicles, having different air pressures, be coupled together, the brakes will apply themselves on those which have the highest pressure. Drivers should, therefore, keep the handle of their brake valve in the neutral position until their train is all coupled up. To ensure the certain release of all the brakes in the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train, and then put the handle of his brake valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they should at once be taken off by opening the release valves from the brake cylinders.

When approaching *terminal stations*, particularly on *falling* gradients, *great care* must be exercised to have the train so under control with the air brake, that, if required, it can be stopped by the *tender hand brake only* before the engine *reaches* the *station buffers.* This must also be very carefully observed in the case of trains that arrive in *docks*, and behind other trains in through stations.

Pilot engines assisting in front must be coupled to the train engine as closely as practicable, and the driver of the leading engine must not put on steam until the steam of the train engine is on, whether this may be in starting or for the purpose of increasing the speed after the steam has been shut off, neither must the tender brake of the leading engine be applied until the train brake is on, and when it is applied, it must not be released until the train brakes are entirely off.

In all cases of two engines being coupled together and fitted with the Westinghouse brake, the brake couplings must be connected, and the driver of the leading engine take full control of the brake power of the train; and the driver's valve of the *train engine* must be placed and *remain in the neutral* position, so as to cut off the communication from the main reservoir of that engine to the train pipe.

The indicator on the train engine will then only show the pressure the leading engine is maintaining in the train pipe. It is essential that the *pressure* in the main reservoir of the *train engine* be *kept above* that in the *train pipe*, otherwise the brakes will apply themselves by air escaping from the train pipe past the driver's valve to this main reservoir.

The air pump of the train engine must, therefore, be kept slowly and steadily working, independent of the pressure shown on the indicator.

The driver of the train engine to take no action in the ordinary stoppages, but he must be, at all times, prepared to apply the brake in cases of emergency.

Guards. — Before starting, and at intermediate stations, where the composition of the train is altered, guards must, in order to guide them on the journey in the application of the brake, make themselves thoroughly aware, personally, of the number and position of the brake-fitted and pipe-fitted vehicles in the train, and must go forward to the driver and give him this information. When there is more than one guard with the train, this will be the duty of the head guard.

Guards must be prepared to apply their hand-brakes as efficiently as possible on being warned by the driver by whistle, and they must not be taken off until the driver gives the whistle "Brakes-off," or until all the vehicles of the train have completely come to a state of rest—including the rebound, if any, of the carriage buffers—and when the hand-brake is being released it must not be allowed to fly off, but must be taken off slowly.

In all cases of trains arriving at terminal stations and in docks, and behind other trains in through stations, guards must apply their hand brakes as far as is necessary to assist in stopping at the proper place.

Guards, when they have occasion to apply the continuous brake from their van, must open the tap and allow the air to escape until the train is brought to a stand, but they should only use the continuous brake in cases of emergency.

Guards must in all cases take the *hand brakes clear off* before starting.

General.—Testing of Brake.—To ensure that the carriages are properly connected, and that the stop-cocks between the engine and the rear vehicle of the train are all open, a test must be made before starting from a terminal station, and after any vehicles are attached or detached on the journey, and after a fresh engine is attached, in the following manner, viz.:—

The guard in charge will allow the air to escape from the tap in the rear van, until the pressure is reduced by at least 10 lbs., after which the pressure should again rise to at least 40 lbs., indicating that the pipes are properly connected and open throughout, and the guard must note the pressure in his journal.

If the air pressure does not rise, the guard will exhibit a red signal to the driver, and both driver and guard must then ascertain what is wrong, and, after putting it right, have the brake again tested.

When the pressure does rise, the guard will exhibit a white signal to the driver until it is acknowledged by the latter giving a signal by hand during the day and by a white light at night. The driver must thereafter apply the brake with full force from the engine, allow it to remain on for about 10 seconds, and then release it quickly. This is done to ensure that the brakes are properly released from all the

vehicles after the test is made by the guard, and the driver must not start the train until the white signal is given by the guard and acknowledged by him.

The test should be made five minutes before the departure of the train, and the signal for starting the train must not be given by the guard until this has been done.

The white and green signals must not be exhibited together.

Should there be a vehicle behind the rear brake van, air must be allowed to escape from the rear stop-cock of that vehicle sufficient to apply the brakes on the train, and, after this has been done, the test from the rear brake van, as described above must be made.

Cut-off Arrangement.—When necessary from any cause the brake of any vehicle can be put out of operation without affecting the working of the brake on the other vehicles of the train by closing the tap under the vehicle between its brake-pipe and triple valve.

When a driver or guard closes this tap, he must report the fact to the carriage examiner at the end of the journey, and the guard must note the same on his journal, giving number and class of vehicle, and reason for closing the tap.

It is the duty of the staff at stations where trains are made up, and where vehicles are attached or detached, to adjust the couplings and air pipes properly, and to be most particular in screwing all of the vehicles *tightly* together, and it is the duty of the fireman to attach the engine to the train before starting, and to detach it at the end of the journey. When the engine requires to be detached at any station for shunting purposes, it is the duty of the station staff to do so, and to do all attaching and detaching of the engine, except in cases of the staff being limited or otherwise engaged, when the fireman must perform the duty at the request of the person in charge. It is the duty of the fireman, when the engine is brought back to the train preparatory to starting, to attach it properly to the train.

Caledonian vehicles not fitted with the Westinghouse apparatus, but fitted with pipe for conveying air to the other vehicles of any train of which they may form a part, will be distinguished by having a *knob* on the handles of the cocks, which are on the main pipe at the ends of the vehicles, and must be carefully noted before starting trains from terminal stations, or intermediate stations where vehicles are attached or detached by the guard, who must inform the driver. The L. & N.W. vehicles so fitted have the end pipes painted red.

To prevent the valve in the guards' brake vans being tampered with, neither Company's servants (unless duly authorised) nor passengers must be allowed to travel in the brake vans, and those unoccupied must be locked up.

The main pipe is fitted with a stop-cock at the ends of each vehicle; the cocks are *open* when the handles are standing across or away from the pipe, and shut when the handles are up or alongside the pipe. *Upon no account must any train be started from a station without all of these cocks being open, except the cock on rear end of the last vehicle, and the one on the leading end of the front engine;* and when the train has to be separated for attaching or detaching, or taking off the engine, the stop-cocks where the separation is to take place *must be shut before* the flexible pipes are disconnected, and when the train is made up again the flexible pipes must be connected *before* the cocks are opened.

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder or pipes leading thereto, which is done by pulling a wire attached to both sides of the frame of the carriage. If the brakes are applied after the engine has been disconnected, they can be released as above or by again connecting to the engine.

Before detaching the engine or any vehicles, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause inconvenience in shunting. Under these circumstances, guards must give special attention to their hand brakes.

At stations where the composition of trains is altered, the staff must be careful to see that all the brakes are clear off, and no train must be allowed to leave with the air brakes on any part however slight. Drivers must stop if they feel the train is being retarded, and have the brakes properly released.

The pipes and joints must be tested with screw-key, where necessary, and kept air-tight, and, when leaks are discovered, they must be corrected, if serious, before the vehicle is again used.

The hose coupling, when not used for connecting the brake between two vehicles, must be attached to the hook provided.

Any defect occurring in the working of continuous brakes must be pointed out by the guards or drivers immediately on arrival at—

Carlisle,	Stirling,
Beattock,	Oban,
Carstairs,	Perth,
Edinburgh,	Dundee West,
Glasgow (Central),	Do. East,
Do. (Buchanan St.),	Forfar,
Gourock (week days),	Montrose,
Greenock (Sundays only),	Aberdeen.
Hamilton,	

to the carriage examiners at these stations.

In the event of a flexible pipe bursting on the journey, the guard will telegraph forward to the first carriage examining station to have a new pipe in readiness to replace the defective one. Any irregularities or special circumstances in the working of the brake, or defects in its action, must also be specially reported by the guard in charge, to his district superintendent, as well as on his guard's journal, giving every particular mentioned in the printed forms supplied for that purpose.

Carriage examiners should see (1) that the brake connexions are perfect and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double piston cylinders should each travel not less than two, nor more than $3\frac{1}{4}$ inches. Those of single piston cylinders should travel not less than four nor more than $6\frac{1}{2}$ inches. (2) that the brake cylinders are perfect and lubricated at least every three months with *paraffin oil*, and (3) that the couplings and other parts are tight, and (4) that they always have on hand, at a convenient place, one or more flexible pipes, with couplings fixed, ready to screw at once on to any vehicle that may require such.

Stop-Cock Handles on G. and S.-W. Plant.—All G. and S.-W. vehicles, with folding end doors, have the handles for the Westinghouse stop-cocks of the main pipe standing the reverse way to those on other vehicles.

Guards must state in their journals whether the train has been worked by the Westinghouse or vacuum brake.

The Vacuum Brake.

Description.

The vacuum used to apply the brake is produced by an ejector placed on the locomotive. This ejector

is double, consisting of a large and a small one, the latter being placed inside the former. The large ejector is used for creating a vacuum, and the small one is worked continuously for maintaining the vacuum during the journey.

Each vehicle is fitted with—

1. A ball valve.
2. A supplementary reservoir, with
3. Diaphragm cylinder with piston rod or rods these are connected.
4. With the brake levers and blocks.

When a train is made up and ready to start, and also when it is running, a vacuum not less than 18 ins. stands equally in the main pipe, from end to end of the train, and in the supplementary reservoir, and on each side of the diaphragm piston of the cylinder.

The brake is applied by admitting air to the train-pipe, and the bottom side of the diaphragm piston of the cylinder.

This causes the ball valve between the train-pipe and the top side of the diaphragm piston of the cylinder to seat itself, and retain the vacuum in the top of the cylinder, and in the supplementary reservoir communicating with it, thus allowing the atmospheric pressure in the train-pipe to act on the diaphragm piston and apply the brake.

The brake is released by again producing a vacuum in the train-pipe and the bottom side of the diaphragm piston of the cylinder by the driver applying the ejector; or when the engine is detached, by moving the lever on the sole bar of the carriage from "auto" to "release." Vehicles which do not have a lever for this purpose, or have not "release" marked on quadrant, are fitted with a wire or cord fixed under the body of the carriage which must be pulled, thus allowing air to enter the supplementary reservoir and top side of the diaphragm and destroy the vacuum.

Instructions.

Drivers.—Before starting, must see that the gauge indicates at least 18 inches of vacuum, and that not less than this amount is maintained during the journey, and while standing at stations. The vacuum is created by admitting steam to the small ejector by means of the steam cock on combination ejector; the small ejector must be kept at work *continuously*.

In order that engine drivers, before starting from stations with trains fitted with this brake, may know when the brake connections are complete, the guard will give a red hand signal when all is ready for the vacuum to be created. The driver must not open the ejector while trains are being coupled up, nor until the guard, by exhibiting this signal, indicates that he may do so.

When the proper amount of vacuum has been indicated on the train pipe gauge in the rear van, the guard will give a white hand signal, and afterwards test it by opening the valve; the driver will then re-create the vacuum.

In ordinary running, the handle of the combination ejector must stand at "*running position.*"

Where two engines are attached to a train, the hose couplings between the engines must be connected, and the driver of the leading engine will be held responsible for the working of the brake.

It is the duty of the fireman, when the engine is attached to the train to connect the hose coupling on the engine to that on the train; and it is his duty when the engine is separated from the train to place the hose coupling of the front carriage on to the stopper provided for the purpose.

Guards.—Before starting from a terminal station, and at intermediate stations where the composition of the train is altered, must see that carriages fitted with lever on the sole-bar have such levers in the "auto." position, that the hose couplings are all connected, and that the one at the end of the train is placed upon the plug; and he must also inform the driver what brake-fitted and pipe-fitted vehicles are in the train.

To ensure that the brake is properly connected throughout the train, the following test must be made five minutes before the departure of the train from a terminal station, and after any vehicles are attached or detached on the journey, and after a fresh engine is attached, viz. :—

The guard in charge will exhibit a red signal to the driver, who in response will create the vacuum. If the train-pipe gauge in the rear van does not show 18 ins. of vacuum, the guard must continue to exhibit the red signal until the necessary vacuum is created. When the proper amount of vacuum has been created, the guard will give a white signal to the driver, and afterwards make a test by opening the emergency valve. The driver will then re-create the vacuum, and the guard must enter on his journal the amount of vacuum, which must not be less than 18 ins., and also record on his journal the amount of vacuum registered on the gauges occasionally during the journey.

When the guard has occasion to apply the brake he must open the emergency valve placed in his van and hold it open until the needle of the gauge goes back to zero. This is only to be employed in cases of emergency.

Guards must see that during the journey nothing is placed so near as to interfere with the lever of the emergency valve in the brake vans.

If, during the journey, the guard should notice anything wrong with the brake apparatus, or should the vacuum gauge show less than 18 inches, he must call the driver's attention by pulling the communication cord, and showing to the driver a green signal by hand lamp or flag. This will signify to the driver that the automatic brake must not be relied upon for pulling up the train at the next stopping station, and the guard must be prepared to assist the driver with his hand brake. In the case of trains not fitted with communication cord, the guard must apply his hand brake when approaching the next stopping place, in sufficient time to bring the train to a stand at the platform without the aid of the vacuum brake, and must advise the driver of the state of the train pipe gauge in his van before proceeding.

In foggy weather the driver must bring the train to a stand immediately the cord is pulled.

Any irregularity or special circumstances in connection with the working of the brake, or defect in its action, must be reported by the guard in charge on his journal. The carriage examiners must be advised at the next stopping station.

The continuous brakes throughout the train being under the control of the driver, the use of the hand brake in the vans is not required for ordinary stops, but guards must apply the hand brake immediately on its being called for by the driver's whistle, *and must in all cases use their hand brakes to stop trains on approaching terminal stations, dock sidings, or principal stations, and must not rely on the drivers pulling up trains by means of the vacuum brake.*

When shunting has to be performed on a rising or falling gradient the guard must leave his hand brake on.

In case of a train becoming divided the guard in the rear van must put the hand brake hard on before going back to protect his train.

General.—Vehicles fitted with a lever on the sole-bar must have that lever placed at the "Automatic" side of quadrant, unless when turned to "Cut-off" or "Release" for shunting purposes. When the brake gear of such vehicles is out of order from leakage or any other cause, the lever on the sole-bar must be

moved into the "*cut-off*" position. This will prevent the brake gear from working on that vehicle, but will not interfere with the brake on the remainder of the train.

Engines Nos. 83, 88, 89, 90, 91, and 113, stationed at Carlisle, and Nos. 410, 411, and 412, stationed at Polmadie, have been fitted, in addition to the Westinghouse brake for engine, with a combination ejector for working trains of foreign companies' carriages fitted with the vacuum brake.

When a train of foreign companies' stock, fitted with the vacuum automatic and not with the Westinghouse brake, has to be worked on any part of the line, one of these engines will be provided for it.

The end vacuum pipes of Caledonian vehicles which are fitted with vacuum pipes, but which have no brake apparatus operating on their wheels are painted a distinctive colour (red). The West Coast Joint Stock carriages and vans are fitted with the combined Westinghouse and vacuum brakes, the former for working over this company's line, and the latter for London and North-Western line.

Through Trains.—Scotland and England.—Down Trains.—Trains which have been worked into Carlisle by London and North-Western engines must have the vacuum destroyed on each vehicle in the following manner before the train is taken forward by a Caledonian Westinghouse engine :—

1st. Remove the pipe of vacuum brake from stopper on the end of rear vehicle.

2nd. Turn the lever on the sole-bar from "auto." to "release," and seen that the brake blocks come off.

3rd. When vehicles have a *release wire* in addition to having "auto." and "release" on the sole-bar, *such wire must be pulled* as well as the lever put into the release position, in order to destroy the vacuum in both cylinder and reservoir.

4th. When the quadrant is not marked "release," the vacuum must be destroyed by pulling the release wire on that vehicle, and also seeing that the brake blocks come off.

5th. Replace the pipe on the stopper at the end of the rear vehicle.

Guards must see, before starting from Carlisle, that the vacuum has been destroyed by examining the vacuum indicators in the vans.

The London and North-Western Company's fireman will leave the vacuum pipe off the stopper when he uncouples his engine from the train; and the Caledonian Railway fireman must put the vacuum pipe on the stopper when he couples his engine on to the train.

When there are any vehicles to detach at Carlisle from the front of the train, the Citadel station shunter must leave the vacuum pipe off the stopper of the front vehicle for the Caledonian line in the same way as the London and North-Western Company's fireman is required to do in the other case.

Up Trains.—Trains going South must have all the levers on the sole-bars placed in the "auto." position of the quadrants when the train *arrives* at Carlisle. In order that this may be carried out, stationmasters must arrange for their staff putting the lever of each vacuum-fitted vehicle in the "auto." position and release wire pulled before it is despatched from their station.

Vehicles off Highland Railway Trains.—Vehicles from the Highland line, fitted with the vacuum brake, and having a quadrant on the sole-bar, must have the vacuum destroyed in the same way as is done in the case of trains off the London and North-Western Railway.

All concerned must take care that nothing is allowed at any time to interfere with any apparatus in connection with either hand or continuous brakes, no matter whether vacuum or Westinghouse brake is being used at the time.

Vehicles for Severn Tunnel Route.—Not more than two carriages not fitted with vacuum brake are permitted on any passenger train through the Severn Tunnel.

GLASGOW AND SOUTH-WESTERN RAILWAY.

Notice.

Westinghouse Continuous Brake.

Description and Instructions for Working.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train is fitted with the following parts :—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston rods; the latter in connection with (4) the brake lever and blocks.

When a train is made up and ready to start, and also when it is running, compressed air stands at about equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, in the triple valve and supplementary reservoir on each vehicle.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top, or steam cylinder is kept well lubricated, (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum,—other oils or tallow *must not be used in the air cylinder*,—(3) that the pump shall be *constantly run*, but never faster than is necessary to maintain the required air pressure,—and (4) *that air from* 50 *to* 60 *pounds pressure for stopping trains, and from* 70 *to* 80 *pounds pressure for express trains*, is carried.

For ordinary stops the brakes should be applied *lightly* by turning the handle of the driver's valve to the right, and *gently* closing it again, after a reduction of pressure in the brake pipe of not less than 5 lbs., nor more than 8 lbs. has been made. If the pressure runs up on the gauge when the handle is brought back, shows that the valve has been shut too quickly.

In ordinary working the brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction is waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge.

In releasing the brakes the handle must be moved quite against the stop to the left and kept there for about *ten seconds*, and then moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers must always satisfy themselves that the brake coupling on their engine is properly connected to that on the train, and that the *cocks in the brake pipe are open.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake-valve towards the right, thus preventing escape of air from the main reservoir.

The blocks of the driving wheel brake should be so adjusted by turning the screw that the pistons travel from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time.

If vehicles having different air pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train; and then put the handle of his brake-valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they should at once be taken off by opening the release valves from the brake cylinders, which ought to be *so arranged as to be worked from the foot-plate.*

After connecting the engine to the train, or after new vehicles have been added, the pipes and reservoirs are to be charged as quickly as possible.

Guards.—Before leaving the terminus, after adding to or detaching from a train on the journey, or on another engine being attached, the rear guard shall ascertain whether the couplings are connected, and the cocks in the brake pipe are all open throughout the train, by applying the brakes from his van and seeing that *they are released from the engine.* If the brake is not in use on the whole train, or if the van is not the last vehicle, the test should be made by opening the cock in the brake pipe of the last vehicle connected.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they should only use the brake in cases of emergency.

Guards must, in all cases, screw the *hand brakes clear off* before starting,

General.—Before detaching the engine or any carriages the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which must be open when the couplings are united except the one at the rear of the train. *These taps must always be opened after connecting the hose couplings, and always closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder or pipes leading thereto. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brake of any vehicle can be put out of operation, without affecting the others, by closing the tap under that vehicle between the brake pipe and triple valve.

Inspectors should see (1) that the brake connections are perfect and properly adjusted for the wear of the blocks and wheels by being *uniformly* taken up. The pistons of double-piston cylinders should each travel not less than 2 nor more than 4 inches. Those of single-piston cylinders should not travel less than 4 nor more than 8 inches. (2) That the brake cylinders are perfect, and lubricated at least every three months with *mineral oil.* (3) That the hose couplings are united, and the cocks in the pipes are open; that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position. (4) That the joints are all air tight.

Note.—No. 3 refers to traffic platform inspector or foreman, who will also see that the hose coupling, when not used for connecting the brake between two vehicles, must be attached to the dummy coupling.

Drivers and guards must at all times arrange to control their trains in approaching terminal stations by the ordinary hand brakes upon the tenders and brake vans, so as not to require the use of the air brakes, unless as an emergency brake, at such place.

W. J. WAINWRIGHT,
General Manager.

Glasgow,
26th December 1881.

THE VACUUM AUTOMATIC BRAKE.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Driver's Instructions.—Before starting see that your gauge indicates at least 18 inches of vacuum. This is done by admitting steam to the small ejector by means of a steam-cock placed for that purpose. To apply the brake, move the lever on the combination ejector to "On." In ordinary running this lever must stand at "Running position." To release the brake, move the lever to position "Off." *When the vacuum is suddenly destroyed in the main pipe the brake is full* "On." When separated from your train see that the couplings are placed upon the dummies fixed for that purpose.

Guard's Instructions.—To apply the brake, press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is to be only employed in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between carriages are properly coupled together, and that the couplings on the end coaches are placed upon the dummies. See by your gauge that a vacuum of 18 inches is maintained. Report otherwise to driver.

General Instructions.—To release the brakes for shunting purposes (the engine having left the train), first see that the hose coupling at one end of the train is off the dummy, then pull the cord which is fixed under the body of each carriage, as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes come off by gravity.

GREAT NORTH OF SCOTLAND.

WESTINGHOUSE CONTINUOUS BRAKE.

Description and Instructions for Working.

DESCRIPTION.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train is fitted with the following parts: (1) a triple valve, (2) a supplementary air-reservoir, and (3) a cylinder with piston-rods, the latter in connexion with (4) the brake-lever and blocks.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, in the triple valve and supplementary reservoir on each vehicle.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top or steam cylinder is kept well lubricated; (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum—*tallow or oil must not be used in the air cylinder*; (3) that the pumps shall be *constantly run*, but never faster than is necessary to maintain the required air-pressure; and (4) *that air from* 50 *to* 60 *pounds pressure for stopping trains, and from* 70 *to* 80 *pounds pressure for express trains*, is carried.

For ordinary stops the brakes should be applied lightly, by opening the valve and closing it gently when the pressure has been reduced from 4 to 8 lbs. on the gauge.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

In releasing the brakes the handle must be moved quite against the stop, and kept there for about 10 seconds, and then moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard or automatically, must at once aid in stopping the train by turning the handle of the brake-valve towards the right, thus preventing escape of air from the main reservoir.

The blocks of the driving-wheel brake should be so adjusted, by turning the screw, that the pistons move up from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time. If vehicles having different air-pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train, and then put the handle of his brake-valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they should at once be taken off by opening the release-valves from the brake cylinders, which ought to be *so arranged as to be worked from the foot plate.*

Guards.—Before leaving the terminus, after adding to a train on the journey, or on another engine being attached, the rear guard shall ascertain whether the couplings are connected and the cocks in the brake-pipe are all open throughout the train, by applying the brakes from his van and seeing that they are released from the engine. If the brake is not in use on the whole train, or if the van is not the last vehicle, the test must be made by opening the cock in the brake-pipe at the rear of the last vehicle connected.

The hose coupling, when not used for connecting the brake between two vehicles, must be attached to the dummy coupling. It is important to observe that the taps at the ends of the vehicles are open when the handles stand across or away from the line of pipes, and closed when parallel to or alongside the pipe.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they should only use the brake in cases of emergency.

Guards must in all cases screw the *hand brakes clear off* before starting.

General.—Before detaching the engine or any carriages, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is again used.

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder, or pipes leading thereto. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brakes of any vehicles can be put out of operation, without affecting the others, by closing the taps under those vehicles, between the brake-pipe and triple valve.

Inspectors should see (1) that the brake connexions are perfect, and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double-piston cylinders should each travel not less than 2 nor more than 4 inches. Those of single-piston cylinders should travel not less than 4 nor more than 8 inches. (2) That the brake-cylinders are perfect, and lubricated at least every six months with *mineral oil*; and (3) that the couplings and other parts are tight.

Special Notes.

When vehicles not fitted with a continuous brake, or having connecting-pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand-brake, and keep it tightly on either until the train has come to a stand or the driver has taken off his brake and is again going forward, as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars, which may occur when a powerful brake is applied to the front portion of the train only.

Drivers and guards must at all times arrange to control their trains in approaching terminal stations by the ordinary hand brakes upon the tenders and brake vans, so as not to require the use of the air brake unless as an emergency brake at such places.

NORTH BRITISH RAILWAY.

Westinghouse Automatic and Continuous Brake.

Description.

1. Compressed air is the agent employed to apply the brake. The air is compressed by a small engine and pump placed on the locomotive. The driver or any

of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

2. The tender and each of the vehicles of the train are fitted with the following parts :—(1) a triple valve, (2) a supplementary air reservoir, and (3), a cylinder with piston rod; the latter in connection with (4) the brake lever and blocks.

3. When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle.

4. To apply the brake, air is allowed by the driver to escape, or, in an emergency, by any of the guards. This causes the triple valves to move down, the air stored in the supplementary reservoirs to pass instantly into the cylinders, the pistons and rods to be forced out, and the blocks to press against the tyres of the wheels.

5. To release the blocks from the wheels, air is allowed to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

6. *Drivers* must see (1) that the steam cylinder is kept well lubricated, (2) that the air pump is sparingly lubricated with a small quantity of mineral oil,—tallow or lard oil must not be used in the air pump,—(3) that the pump is constantly run, but *never faster than is necessary to maintain the required air pressure,*—and (4) *that air of about sixty pounds pressure is carried.*

7. The brakes must not be used with more than half the full force, except in case of danger.

8. The brakes are fully set when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

9. To apply the brakes lightly, the tap must be partially opened and *gently* closed when the pressure has been reduced from 4 to 8 lbs.

10. In releasing the brakes the handle must be moved against the stop and kept there for about five seconds, and then moved back just far enough to stop the escape of air from the top of the tap.

11. Drivers, upon feeling the brakes are applied, must at once aid in stopping the train by turning the three-way cock and preventing escape of air from the main reservoir.

12. The blocks of the driving wheels must be so adjusted by turning the screw that the pistons only move up from 3 to 4 inches.

13. Drivers are hereby reminded of the following rule, as contained at page 141 of the book of rules and regulations, viz. :—

> *Rule* 267*a*. It is the duty of the engine-driver of a train provided with a continuous brake, before starting the train, and at places where the engines are changed, to ascertain from the head guard the number of vehicles there are on the train, and upon how many of them the brake can be applied, and when any vehicles are attached or detached on the journey, the engine-driver must ascertain whether the attaching or detaching of such vehicles will interfere with the working of the brake on the whole or a portion of the train, and if the latter, to what extent.

This rule does not apply to trains made up entirely of vehicles fitted with a continuous brake running daily with the formation unaltered and the brake complete. When, however, in such cases the formation is altered, or vehicles are attached or detached, the guard and the engine-driver must communicate with each other.

14. *Guards.*—On all trains provided with a continuous brake where there are more than one guard, the guard riding in the rear van for the time being will be held to be the head guard.

15. In order to prove whether the continuous brake is connected throughout, the guard in the rear van must, after the engine has been coupled on to the train, examine the pressure in the gauge, at the same time lifting the handle of the valve and ascertaining that air escapes. If the brake is not in use on every vehicle in the train, or, if the van is not the last vehicle, the test must be made by opening the cock in the brake pipe of the last vehicle connected, which must be one having the *brake apparatus complete.* (See clause 2.) These tests must be made on the following occasions :—(1) *Before commencing the journey*—invariably whether the train starts from a terminal or roadside station; (2) *On the journey*—invariably whenever vehicles are added to or taken off the train or any change is made in the engine or the engine is reversed.

16. Guards, when they have occasion to apply the continuous brake from a van, must hold the handle and allow the air to escape until the train is brought to a standstill, but must only use the brake in case of emergency.

17. When any vehicles not fitted with a continuous brake, or having connecting pipes only, are attached to a train fitted with such brake, the guard in the rear van must immediately, upon the continuous brake being applied by the driver, apply his hand brake and keep it tightly on, either until the train has come to a stand, or the driver has taken off the continuous brake, and is again going forward, as the case may be. This arrangement is necessary to prevent the rebound of the carriages, which may occur with trains composed of vehicles when only partially fitted with continuous brake.

18. Guards must, in all cases, screw the hand-brakes clear off before starting.

19. Guards are hereby reminded of the following rule as contained at page 123 of the book of rules and regulations, viz. :—

> *Rule* 235*a*. The head guard of a train provided with a continuous brake must, before starting the train and at places where the engines are changed, inform the engine-driver the number of vehicles there are on the train and upon how many of them the brake can be applied; and when any vehicles are attached or detached on the journey, the engine-driver must be advised, and told whether the attaching or detaching of such vehicles will interfere with the working of the brake on the whole or a portion of the train, and if the latter, to what extent.

This rule does not apply to trains made up entirely of vehicles fitted with a continuous brake running daily with the formation unaltered and the brake complete. When, however, in such cases the formation is altered, or vehicles are attached or detached, the guard and the engine-driver must communicate with each other.

20. *General.*—Before detaching the engine, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

21. The brake pipe has a tap at each end of every vehicle, all of which taps should be open when the hose couplings are united, except the one at the rear of the train. These taps must always be opened *after* connecting the hose couplings and closed *before* separating them.

22. If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small taps in the brake cylinder or pipes leading thereto. These taps, after the release of the brakes, must be closed. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting.

23. It is important to observe that the taps at the ends of the vehicles are open when the handles stand across, or away from the line of pipe, and closed when parallel to, or alongside, the pipe.

24. When the handle of the tap of the triple valve stands across, or away from the valve, it is set for the automatic brake. When against the stop at an angle of 45°, the brake is thrown out of use on the carriage.

25. Care must be taken (1) that the brake connections are perfect and properly adjusted for the wear of the blocks and wheels, (2) that the brake cylinders are perfect and lubricated occasionally with *mineral oil*, and (3) that the couplings and other parts are tight.

Application of Westinghouse Brake.

The attention of engine-drivers and firemen is specially called to the following Standard Instructions issued by the Westinghouse Brake Company :—

"Engine-drivers must exercise care and moderation in applying the brakes for ordinary stops, so as to bring their trains to rest without inconvenience to the passengers and to avoid damage to couplings.

"To ensure this, it is necessary that the brakes should be applied moderately in the first instance at a distance of several hundred yards from the station. *Just before coming to a stand the brakes should be released*, so as to avoid any jerk, and the *hand brake* on engine or tender must be applied *to stop* and hold *the train*."

Engine-drivers and firemen are requested to carry out these instructions carefully; any failure to comply therewith will be seriously noticed.

VEHICLES FITTED WITH WESTINGHOUSE AUTOMATIC AND CONTINUOUS BRAKE APPLIANCES.

As far as possible, vehicles with the Westinghouse brake fittings must compose those trains which are worked by engines having the Westinghouse brake appliances attached, *a preference being always given to express and fast trains, which must, when practicable, be formed entirely of such vehicles.*

It is not intended that any train shall be composed partly of Westinghouse brake carriages and partly of other carriages, but it is meant that the trains shall be made up entirely of either one or the other kind of stock, so that the Westinghouse brake trains may always be complete. But, in cases where there may not be sufficient vehicles with the necessary fittings to compose the whole train, it is desirable that those with the Westinghouse brake be placed continuously next to the engine, so that the largest possible measure of brake power may be available.

Westinghouse brake carriages must not, except from unavoidable circumstances, be run upon trains whose engines are not fitted with the Westinghouse brake. Whenever it happens that Westinghouse brake carriages must be so used, the station-master attaching such carriages must report the case to the General Superintendent's office, giving the reasons why such was done; and the guards must also note the fact specially in their train reports, mentioning how many Westinghouse vehicles were on their train.

BELFAST AND NORTHERN COUNTIES RAILWAY.

ARRANGEMENTS FOR WORKING VACUUM AUTOMATIC BRAKES.

All trains working with the automatic brake are to be controlled by drivers only. The guards are not to apply these brakes except in cases of emergency.

When entering terminal stations these brakes will not be used; it will, therefore, be necessary for the drivers and guards to use the hand-brakes, as they have formerly been in the habit of doing.

Before starting, the vacuum gauges in engine and brake-van must indicate a vacuum of at least 15 inches, and this vacuum must be constantly maintained, excepting, of course, when air is admitted to apply the brakes.

On arrival at a terminal or other station where the vehicles are to be shunted or taken on by an engine not fitted with the automatic brake, it will be necessary to go to each vehicle in turn to leak the brakes off by pulling the wire placed under the frames for that purpose, before the vehicles can be moved.

The driver of a train provided with continuous brakes must be informed by the guard before starting, and at places where engines are changed, how many vehicles there are on the train, and upon how many of them the brake can be applied; and when any vehicles are attached on the journey the driver must be told whether the attaching of such vehicles will interfere with the working of the brake on the whole or any portion of the train, and if the latter, to what extent. The driver must see he gets this information.

When vehicles are supplied with connecting pipes only they must be considered as vehicles without brakes.

When vehicles not fitted with the continuous brake, or having connecting pipes only, are attached in rear of a train fitted with such brake, the guard in the rear van of such portion must, immediately upon the continuous brake being applied, apply his hand-brake, and keep it tightly on either until the train has come to a stand, or the driver has taken off the continuous brake, as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breakage of drawbars, which may occur when a powerful brake is applied to the front portion of a train only. Vehicles fitted with connecting pipe only should, when possible, be placed between the engine and carriages, or as near the engine as possible.

It is the guard's duty before starting to see that all pipes between the vehicles are properly coupled together, and that the pipe at rear of last vehicle is placed on the iron plug fixed for that purpose to the train pipe.

Guards and drivers must report all irregularities in the working of trains fitted with the automatic vacuum brake.

Guards to note in journal, and drivers to note on mileage sheets trains worked with continuous brakes

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CAVAN, LEITRIM, AND ROSCOMMON LIGHT RAILWAY AND TRAMWAY.

INSTRUCTIONS FOR WORKING THE AUTOMATIC VACUUM BRAKE.

The brake can be applied throughout the train by the driver from the engine or by the guard from the van.

Creating Vacuum.—The engine having been coupled to the train and the hose coupling between the tender and train, also those between the vehicles connected and the one at the end of the train placed upon the plug, the driver admits steam to the small ejector which will soon exhaust the train pipe and cylinders, to a vacuum of 20 to 24 inches, or the large ejector may be used if the vacuum is required to be obtained more rapidly. The small ejector must be kept at work continuously to maintain the vacuum.

Before starting the driver must see that the gauge indicates at least 18 inches of vacuum, and that not

less than this amount is maintained during the journey and while standing at stations. The vacuum is created by admitting steam to the small ejector, by means of the steam cock on combination ejector.

To apply the brake, move the handle on combination ejector in the direction marked "BRAKE ON."

To release the brake, move the handle on combination ejector in the direction marked "BRAKE OFF."

In ordinary running this handle must stand at "RUNNING POSITION."

When the guard has occasion to apply the brake, he must press down the handle on the valve placed in his van. This admits air throughout the train pipe, and is only to be employed in cases of emergency. The valve in the van opens automatically when the brake is applied suddenly by the driver, and ensures rapid action. The guard must see by the gauge in his van that a vacuum of at least 18 inches is maintained, or report otherwise to the driver. He must also see that all pipes between the carriages and engine are properly coupled together, and that the coupling on the last vehicle is placed upon the plug.

Whenever the pipes between the vehicles are disconnected the coupling must be placed upon the stop plug at the end of the vehicle.

To release the brake for shunting purposes (the engine having left the train), first see that hose coupling at one end of the train is off the plug, then pull the wire or cord fixed under the frame of each carriage. This admits air to the top side of the cylinder and the brakes fall off by gravity.

To couple the pipes the guard or porter must take one in each hand, and lift them sufficiently high to hook the bottom horns of the coupling together first, and then, by lowering them, place the top horns of the couplings in the slots.

To uncouple the pipes the guard or porter must simply lift them straight up, when the horns at the top will come out of the slots and the coupling will then separate.

The responsibility for properly coupling up all vehicles rests with the station staff and the guard; and the driver is responsible for his engine being properly coupled up by his fireman.

URBAN BROUGHTON,
Traffic Manager.

CORK AND MUSKERRY LIGHT RAILWAY.

TRAINS WITH PATENT CONTINUOUS BRAKE.

Vehicles (not being fitted with the apparatus) must be put at the rear of these trains, in order to preserve the continuity of the brake connexions in front.

Not more than four may be attached behind the guard's van, and proper couplings must, in all cases, be used, care being observed to have the usual tail lamp on the last vehicle.

INSTRUCTIONS TO ENGINE DRIVERS.

Application of the Brakes.

Before starting at the beginning of each journey the train must be examined to see what number of brake-fitted vehicles are connected, and the number that are in the rear of the train not fitted with brakes, or, if fitted, are not under the control of the driver.

Ordinary stoppages must not be made too quickly, and to avoid this the brake must be applied slightly some distance from where the train is to be stopped, and the application of it gradually and uniformly increased until the train comes to a stand, and must at all times be released very cautiously, to prevent the jerk consequent on the rebound of the carriage buffers and the engine shooting ahead, and to avoid subjecting the couplings to undue strain, and the passengers to discomfort.

This method of application to be carefully attended to when there are vehicles in rear of the train not fitted with brakes, and in such cases it is the duty of the guard to apply the rear brake.

When approaching terminal stations, particularly on falling gradients, great care must be exercised to have the train so under control that, if required, it could be stopped by the tender brake before the engine reaches the station buffer-stop.

Drivers must satisfy themselves that the brake is at all times in good working order. Before starting from a terminal station they must never fail to put on the brakes, and notice if the ejectors maintain a good vacuum both with the engine and carriage brakes. They must from time to time test its working.

The tender hand brake is not to be used for ordinary stoppages, but must be used occasionally when running light, in order to its being kept in a state of efficiency for emergencies, and always at terminal stations.

CORK, BANDON, AND SOUTH COAST RAILWAY.

WORKING AUTOMATIC VACUUM BRAKE.

Description.

1. The automatic vacuum brake stops the train by the application of the brake blocks to the tyres, in the same way as the ordinary hand-brake; but the levers which apply the blocks, instead of being worked by a screw, are worked by a cylinder and piston, actuated by atmospheric pressure.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine, or by the guard from his van; but in order that this may be done, it is imperative that the flexible connexions between each carriage, and between the engine and the train, shall be properly coupled up.

Instructions for Working.

3. In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together, and next to the engine. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake van, with a guard in it, must be the last passenger vehicle in the train, and this guard must apply his hand-brake in running into all stations where the train is to be stopped.

4. Before starting, the engineman must see that his gauge indicates at least 18 inches of vacuum, and this must be kept up during the journey.

5. On no account must the small ejector be shut from the time the train starts until the journey is finished.

6. Six to eight inches in the difference of the train pipe and reservoir gauge is sufficient for an ordinary stop, and the handle should be moved into the running position before the train stops, so as to avoid jerking the train.

7. The steam-cock on the boiler must always be shut when the engine is in shed, to prevent steam leaking back into the pipes.

8. When the train is approaching a terminal station, a dead-end siding, or a crossing place where a train is on the line before or when an engine is approaching a train containing passengers, for the purpose of shunting or coupling, the hand-brake only must be used; except in cases of emergency, and on such occasions the guard must be ready to assist with his hand-brake.

9. The engineman will be held responsible for coupling the pipes between his engine and the first vehicle of the train.

10. Before leaving terminal stations, or stations where vehicles have been added to or detached from the train, the engineman must get a signal from the head guard to intimate that the gauge in the guard's van shows not less than 18 inches of vacuum, and the guard, before giving such signal, must satisfy himself that the gauge in van shows not less than 18 inches.

11. If from any cause the engineman is unable to obtain at least 18 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand-brakes.

12. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air-valve on the engine, so that there may be no delay in coupling or uncoupling.

13. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made on their journals. They must at all times be ready to apply the hand-brake should the engineman call by whistle for its assistance.

14. In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.

15. The head guard before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman:—

1st.—That all vehicles throughout the train fitted with the brake, have the flexible pipes properly coupled up.

2nd.—That the flexible pipe at the rear of the last brake-vehicle is properly placed upon the stop-plug.

3rd.—That 18 inches of vacuum is indicated by the gauge in the rear van on the train; and

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

16. Porters and others are cautioned not to step on the hose-pipes.

17. Porters and others coupling hose-pipes must be careful not to let oil get on the pipes, as it damages the rubber. Carriage examiners are cautioned for the same reason not to oil the piston-rods of the cylinders, but they should be wiped with a dry patch.

18. The brake-blocks of all vehicles must be carefully examined by the carriage examiners, and adjusted by them only.

19. It is necessary that the words "Continuous Brake Train" shall be written at the top of the engineman's sheet and guard's report for every train fitted with the automatic vacuum brake. It is also necessary for the engineman to show on his mileage ticket the trains which have been worked by him with a continuous brake during the week.

20. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his sheet, which must be accompanied by a special report giving full particulars of the irregularity.

21. To release the brakes for shunting purposes, take the hose-coupling off the stopper at one end, and pull the string fastened to the side of each carriage.

ALEX. GORDON,
General Manager.
JAMES W. JOHNSTONE,
Locomotive Engineer.

CORK, BLACKROCK, AND PASSAGE RAILWAY.

General Instructions.

Automatic Vacuum Brake for Regular Use in Daily Working.

Description.

1. The automatic vacuum brake stops the train by the application of the brake blocks to the tyres, in the same way as the ordinary hand brake; but the levers which apply the blocks, instead of being worked by a screw, are worked by cylinder and piston, actuated by atmospheric pressure.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine or by the guard from his van; but in order that this may be done, it is imperative that the flexible connections between each carriage, and between the engine and the train, shall be properly coupled up.

Instructions for working.

3. In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together and next to the engine. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake van, with a guard in it, must be the last vehicle in the train.

4. Before starting, the engineman must see that his gauge indicates at least 18 inches of vacuum, and this must be kept up during the journey.

5. On no account must the small ejector be shut from the time the train starts until the journey is finished.

6. Six to eight inches in the difference of the train pipe and reservoir gauge is sufficient for an ordinary stop; and the handle should be moved into the running position before the train stops, so as to avoid jerking the train.

7. The steam-cock on the boiler, must always be shut when the engine is in shed, to prevent steam leaking back into the pipes.

8. When the train is approaching a terminal station a dead-end siding or a crossing place, where a train is on the line before, or when an engine is approaching a train containing passengers, for the purpose of shunting or coupling, the hand-brake only must be used, and in all such cases, the guard, on hearing the engine whistle, is to apply his hand-brake, and not remove it unless signalled from the engine by two short whistles. Automatic vacuum brake to be only used in cases of emergency.

9. The engineman will be held responsible for coupling the pipes between his engine and the first vehicle of the train.

10. Before leaving terminal stations, or stations where vehicles have been added to or detached from the train, the engineman must get a signal from the head guard to intimate that the gauge in the guard's van shows not less than 18 inches of vacuum; and the guard, before giving such signal, must satisfy himself that the gauge in van shows not less than 18 inches.

11. If from any cause the engineman is unable to obtain at least 18 inches of vacuum he must inform the guard of the fact, and they must work the train forward with the ordinary hand-brakes.

12. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air-valve on the engine, so that there may be no delay in coupling or uncoupling.

13. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made. They must at all times be ready to apply

the hand brake should the engineman call by whistle for its assistance.

14. In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.

15. The head guard before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman :—

1st—That all vehicles throughout the train fitted with the brake, have the flexible pipes properly coupled up.

2nd—That the flexible pipe at the rear of the last brake-vehicle is properly placed upon the stop-plug.

3rd—That 18 inches of vacuum is indicated by the gauge in the rear van on the train; and

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

16. Porters and others are cautioned not to step on the hose-pipes.

17. Porters and others coupling hose-pipes must be careful not to let oil oil get on the pipes as it damages the rubber. Carriage examiners are cautioned for the same reason not to oil the piston rods of the cylinders, but they should be wiped with a dry patch.

18. The brake-blocks of all vehicles must be carefully examined by the carriage examiners, and adjusted by them only.

19. It is necessary that the words "Mixed Trains" shall be written at the top of the engineman's sheet and guard's report when all vehicles are not fitted with the automatic vacuum brake, and the proportion of such vehicles which may be placed at the rear of a passenger train is one in four, the engine counting as two vehicles and waggons (four wheels) half each.

20. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his sheet, which must be accompanied by a special report giving full particulars of the irregularity.

21. To release the brake for shunting purposes, tak the hose coupling off the stopper at one end, and pu the string fastened to the side of each carriage.

GREAT SOUTHERN AND WESTERN (IRELAND) RAILWAY.

Automatic Vacuum Brake.

Instructions as to Working.

Drivers.

Before starting, the driver must blow up the vacuum to 18 inches, and wait until the guard comes up to the engine to tell him whether the gauge in rear van indicates the proper amount of vacuum, and also to give him the other information, as laid down in the guard's instructions below. This is also to be done at each station where any attaching or detaching has taken place.

While running, the vacuum is to be kept as near 18 inches as possible, it must not fall below 15 inches, or rise above 20 inches.

To apply the brake, move the brake handle in the direction marked *ON.*

The difference between the two fingers marked *TOP* and *BOTTOM* on the engine gauge gives the amount of brake pressure at any time; thus, if the *BOTTOM* finger indicates 10, and the *TOP* finger 18, then the brake is on with 8 inches. When the brake handle is moved suddenly to the *ON* position for a quick application the valves in the guards' vans open automatically, and the brake is on with a pressure of as many inches as is then shown by the *TOP* finger of the gauge.

To release the brake, move the brake handle to position marked *OFF,* the small ejector will then gradually take the brake off; if necessary to take it off more rapidly use the big ejector.

If the big ejector be pulled when the brake handle stands at ON it will put the brake on harder; if the big ejector be pulled when the brake handle stands at OFF it will take the brake off quicker.

Note.—The amount of vacuum shown by the gauge when the brake was put on must be recreated before the brake will come fully off. Thus, if there was a vacuum of 20 inches when the brake was put on, or if the finger marked *TOP* was blown up to 20 while the brake was on, then it would be necessary to get at least 20 inches on the *BOTTOM* finger before the brake would be fully released.

When running, the brake handle is to stand upright at position marked *R,* and the small ejector is to be regulated to maintain the required vacuum. Should the driver find it impossible to maintain the proper vacuum, or should he be signalled by the guard (pulling the communication cord and showing a green signal), that the vacuum is not maintained on the van gauge, the train must be stopped under the next fixed signals, when the driver and guard will arrange as to what should be done.

(*a.*) The brake may be disconnected from the last three or four vehicles and worked on front portion of train only, the guard working his hand brake, or

(*b.*) If the vehicle with defective brake should be next to the engine, it might be shunted to the rear, and the brake disconnected from it, leaving the brake good on the rest of the train.

(*c.*) The train brake should not be disconnected and put out of use unless absolutely necessary, and then the train must be worked with care and at reduced speed where necessary.

If both fingers of the vacuum gauge suddenly drop to zero (showing that the brake has been applied by the guard, or by separation of couplings), move the brake handle to *ON,* and if required, pull the big ejector.

The brake is not to be used for entering terminal stations or stations with blind ends.

For ordinary stops reduce the vacuum on *BOTTOM* side about 3 or 4 inches, and then regulate the force by giving a little more or less as may be required. A decided reduction of three or four inches should be made when first applying, but if too much air is admitted the valves in the vans will open and apply the brake with full force in spite of the driver.

After coming to a stand at stations where attaching or detaching has to be done, the driver should destroy the vacuum in the train pipes by moving the brake handle gently to the *ON* position, and shut off the small ejector; this will leave the pipes easier to uncouple.

Guards.

The guard can apply the brake by holding down the lever of valve in his van, but he must not make use of the brake except in case of urgent necessity.

Head guard, before giving the signal to start, at the commencement of the journey, and at stations where any flexible pipes have been coupled or uncoupled, must ascertain, and inform the engine driver :—

1st. That all vehicles throughout the train fitted with brakes have the flexible pipes coupled up.

2nd. That the flexible pipes at the rear of the last vehicle are properly placed upon the stop plug.

3rd. That 15 inches of vacuum is indicated by the gauge in the rear van of the train.

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over and what number are without the vacuum brake, and in the case of a foreign vehicle being attached, to indicate to the driver its position on the train. When running, if the vacuum on the van gauge is allowed to fall below 15 inches, the guard must pull the communication cord, and show the driver a green hand signal.

The brake is not to be used for entering terminal stations or stations with blind ends; guards must be at their hand brakes when passing the distant signal for such stations, and must work the hand brake and assist the driver in making the stop.

The working of the continuous brake by the driver does not relieve the guard of any responsibility; he must keep a good look out and be prepared to apply the hand brake if necessary.

Guards must enter in their journals and report particulars of any failure or unsatisfactory working of the brake; they must also see that nothing is placed so as to interfere with the valve lever in their vans.

Guards must not depend upon the automatic brake to hold a train on an incline when detached from the engine, but must use their hand brakes and act as directed in rule book as if the train had no continuous brakes.

General Instructions.

Porters and others must be careful not to step on the brake pipes when crossing the buffers.

When the brake pipes are disconnected they must not be left hanging down, but must be placed firmly on the stop plugs at the ends of the vehicle.

To release the brake for shunting (the engine having left the train) pull the wire which will be found attached to frame of the carriage close to the red star; a light pull is quite sufficient, but the wire must be held for a few seconds till the brakes drop off.

To couple the pipes take one in each hand, lift them high enough to hook the bottom horns of coupling together, then lower them, and the projections on top of the coupling will fall into the slots. To uncouple the pipes, lift the couplings straight up, when they will separate.

When handling the couplings porters, firemen, and others must be careful not to have any waste or sponge cloth in their hands in order to prevent such things getting drawn into the pipes.

When attaching any foreign vehicles having only one train pipe to G. S. and W. trains, couple the pipe on the foreign vehicle to the large or bottom G. S. and W. pipe (*i.e., couple the only pipe which will couple*) and leave the small G. S. and W. pipe on the plug.

All vehicles on which the brake is automatic are marked with a red star on the frame on each side.

H. A. Ivatt, *Locomotive Engineer.*

J. H. Bell, *Superintendent of Line.*

MIDLAND GREAT WESTERN RAILWAY.

Rules to be observed in Working Power Brakes.

Instructions to Enginemen.

Continuous (Vacuum) Brakes applied to Passenger Engines and Carriages.

Before starting on the journey, when the engine is attached to the train, the driver must examine his train to see that all brake-fitted vehicles are connected, and he is to note the number (if any) in rear of the guard's van not so fitted, or, if fitted, which are not connected, so that he may know the amount of brake-power at his command

At each intermediate station, where vehicles are taken on, or left off, it must be ascertained from the guard (whose duty it is to walk forward to the engine and give the information) to what extent the brake-power is affected by the altered composition of the train.

Ordinary stoppages must not be made too quickly, therefore the brake must be applied slightly some distance from where the train is to be stopped, and the application of it gradually and uniformly increased, until the train comes to a stand, and it must at all times be released very cautiously, to prevent the jerk consequent on the rebound of the carriage buffers and the engine shooting ahead, and to avoid subjecting the couplings to undue strain and the passengers to discomfort.

Especial care to be observed when there are vehicles in rear not fitted with brakes.

When approaching terminal stations, particularly on falling gradients, great care must be exercised, so that the stopping of the train may be under the driver's complete control. *All trains are to be stopped at every terminal and junction station by hand-brakes only*, except in case of failure of the hand-brakes, or in the event of some sudden danger arising that calls for the instant pulling up of the train, then the power-brake is to be used.

Drivers must satisfy themselves that the brake is at all times in working order. Before starting from a terminal station they are to put on the brakes and notice if the ejectors maintain a good vacuum both with the engine and carriage brakes. They must from time to time test its working.

Each engine and guard's van will be fitted with a "tell-tale" vacuum gauge. When the vehicles are all coupled together and attached to the engine and a vacuum maintained in the pipes, then the gauge will show the word "right." When the engine is detached, or any of the vehicles separated, the dial wil show the word "wrong," which means that the brake is not in working order. This may result from the connecting air-pipes between the carriages not having been coupled up, through some accident to the pipes, or to the vacuum cylinders, or from part of the train becoming detached.

Whatever the cause, when the dial shows "wrong," it is to be understood the vacuum-brake is defective, and no longer to be relied on, and recourse must then be had to the hand-brakes, and prompt steps taken to remedy any accident or make good any defect that may have taken place.

In addition to the tender hand-brake being *always* used when coming into a terminal station it must be used occasionally when running light, to insure its being kept in good working order.

It is the duty of the fireman to couple the air-pipe of the engine to the air-pipe of the train before starting, and to detach it at the end of the journey; and if the pipes between the tender and the next vehicle to it have been uncoupled at intermediate stations for shunting or other purposes, the fireman must see that they are properly coupled before the train starts, and the driver is to see that the fireman properly carries out this work.

Instructions to Guards.

The head guard must examine the train to see the number of brake-connected vehicles, and to give the necessary information, mentioned above, to the driver; and when there are vehicles over which the driver has no brake-control, the guards must give the necessary attention to the hand-brake. The working of the continuous brakes by the driver will not relieve the guards from any responsibility; they must keep a good look-out, and be prepared to apply the hand-brakes whenever any necessity arises. At terminal

stations guards must apply their hand-brakes should they think the driver has not his train well in hand, or that there is the least risk of touching the buffer-stops.

The guards of the train must examine the couplings at each station where the stopping time will admit of it, and satisfy themselves, before ordering the train to start, that the pipes are firmly and properly coupled, and that the couplings and pipes are in thoroughly good order.

Guards must enter on their journals full particulars of any defect, failure, or unsatisfactory working of the brakes of their train, or any portion of the fittings, couplings, &c. They must also enter upon their journals any sudden stop made by the application of the power-brake, and state the circumstances.

Guards are required to read, and to make themselves thoroughly conversant with, the *Instructions to Drivers* on the working of continuous brakes; and their special attention is called to the Rule for the application of hand-brakes with mixed and goods trains, and to the use of hand-brakes when coming into all terminal stations.

General Instructions.

Station-masters, inspectors, and foremen must give special attention to the proper coupling of the air-brake-pipes by experienced porters, and must carefully examine the couplings before starting the train. They must make such arrangements as will insure these pipes being cared for, and in no way improperly used.

All the vehicles composing the train are to be coupled tightly together to prevent excessive action of the buffers of the carriages when the brake is applied, and to insure that the air-pipes will not be disconnected by any strain that may be put upon the drawbars.

It is the duty of the staff at stations to adjust the couplings and air-pipes of the carriages properly, and it is the duty of the fireman to attach his engine to the train before starting, and to see to the brake-couplings between the engine and the train. The driver, at stations where trains are first started from, and the head guard at intermediate stations, where vehicles are taken on or left off, are responsible for seeing that the couplings and air-pipes of the carriages composing the train are properly adjusted.

Care must be taken when, from any cause, vehicles fitted with the air-brake are detached from the train, and the pipes disconnected, that the pipes are again coupled; and when, in like manner, vehicles are attached to the train, the pipes must be properly coupled, so as to form continuous communication throughout the train, the pipe on the last brake-fitted vehicle being coupled to its "dummy."

When vehicles fitted with a continuous air-brake are left in sidings or at stations, the brake-pipes of each vehicle must be coupled to the "dummy" (fixed to each pipe) and not left hanging loose.

Porters and others are cautioned that, in passing between vehicles, *they must not step upon the brake-pipes*, or in any way interfere with the connexions.

Carriage trucks must always be put at the rear of trains.

WATERFORD AND CENTRAL IRELAND RAILWAY.

Instructions for Working Continuous Automatic Vacuum Brake.

1. In the formation of trains when the whole of the coaches are not fitted with the Automatic Vacuum brake those that are so fitted must be placed together and next to the engine. When the whole train is not fitted, the automatic vacuum brake must not be used for ordinary stoppages, but only in cases of emergency. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake carriage or van, with a guard in it, must be the last passenger vehicle in the train, and this guard must apply his hand-brake in running into all stations where the train is to be stopped.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus, by the engineman from the engine, or by the guard from his van; but in order that this may be done, it is imperative that the flexible connections between each carriage, and between the engine and the train shall be properly coupled up.

3. Guards must never apply the automatic vacuum brake except in cases of absolute emergency, and whenever they do so a full report of the circumstances must be made on their journals; they must at all times be ready to apply the *hand-brake* should the engineman call by whistle for its assistance.

4. When the automatic vacuum brake is to be used for the ordinary stoppage of trains it must be by the engine-man opening the air valve on the engine, but it must be done gradually and never suddenly or with full force except in cases of emergency, and care must be exercised to prevent jerking and rebounding of trains.

5. *In approaching junctions, terminal stations, or stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, the automatic vacuum brake or steam brake must only be used in cases of emergency, the engineman taking care to reduce the speed of the train so that the train may be brought to a stand by the hand-brakes alone. Guards must be at their hand-brakes when passing the distant signal for such stations, and must work the hand-brake and assist the driver in making the stop.*

6. In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.

7. In descending inclines, the engineman must, when necessary to reduce the speed, use the automatic vacuum brake in preference to the hand-brakes, and care must be used in applying the automatic brake at any time so that the wheels will not skid.

8. The head guard before giving the signal to start at the commencing of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman—

1st—That all vehicles throughout the train fitted with the brake, have the flexible pipes properly covered up.

2nd—That the flexible pipe at the rear of the last brake vehicle is properly placed upon the stop plug.

3rd—That 15 inches of vacuum is indicated by the gauge in the rear van, on the train, and,

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

9. The engineman before starting at the commencement of the journey, and also at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain from the guard the number of vehicles in the train fitted with the brake, the flexible pipes of which are coupled up to the engine, and that a vacuum of at least 15 inches is shown by the gauge in the rear van. He must also be careful to see—

That the vacuum pipe of his engine is properly coupled up to the leading vehicle in the train.

That at least 15 inches of vacuum is indicated by the gauge on the engine.

10. If from any cause the engineman is unable to obtain at least 15 inches of vacuum, he must inform

the guard of the fact, and they must work the train forward with the ordinary hand-brakes.

11. Just before coming to a stand, after the application of the automatic vacuum brake at stations, or when stopped on the road, the engineman must use his ejector so as to partially release the continuous brake. This will prevent any rebound of the carriages and will also enable the engineman to start his train immediately on receipt of the signal to do so.

12. When the pipes between the engine and train are disconnected, the couplings must be placed on the plug stops provided for the purpose. Detached carriages must always have the hose couplings placed on the plug stops.

13. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air valve on the engine, so that there may be no delay in coupling or uncoupling.

14. As india-rubber is dissolved by oil or grease, it is most important that nothing of a greasy nature should be applied to, or allowed to reach the piston or piston rod. The only lubrication which is required is a little pure blacklead, which must be placed inside each cylinder by the persons appointed for the purpose. The other part of the brake must be cleaned and oiled by the examiners in the usual way.

15. In the case of vehicles fitted with the combined hand and vacuum brake, the guard must see before starting that the hand-brake is screwed "full off," and the handle secured by means of the chain provided for that purpose.

16. It is necessary that the words "continuous brake train" shall be written at the top of the engineman's train bill and guard's report for every train fitted with the automatic vacuum brake. It is also necessary for the engineman to show on his mileage ticket the trains which have been worked by him with a continuous brake during the day.

17. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his train bill, which must be accompanied by a special report giving full particulars of the irregularity.

18. Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever of the brake setter.

19. When vehicles are supplied with connecting pipes only, they must be considered as vehicles without the brake, but the brake connections must be made as described in clause 2.

20. When vehicles not fitted with a continuous brake or having connecting pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand-brake, and keep it tightly on, either until the train has come to a stand, or the driver has taken off his brake and is again going forward as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars which may occur when a powerful brake is applied to the front portion of trains only.

21. The working of the continuous brake by the driver does not relieve the guard of any responsibility; he must keep a good look out and be prepared to apply the hand-brake if necessary.

22. Guards must not depend upon the automatic brake to hold a train on an incline when detached from the engine, but must use their hand-brakes and act as if the train had no automatic brake.

23. To release the brake for shunting after the engine is detached, pull the wire which will be found attached to the frame of the carriage close to the red star; a light pull is sufficient, but the wire must be held for a few seconds till the brakes come off.

24. When handling the couplings, porters, firemen and others must be careful not to have any waste or such like article in their hands, in order to prevent such things getting drawn into the pipes.

Porters and others must be careful not to step on the brake pipes when crossing the buffers.

Shunters, porters and others will render themselves liable to immediate dismissal for tampering with or removing the vacuum brake washers or any other portions of the fittings.

J. D. Nott, Secretary.

Head Offices, Waterford, September, 1893.

WATERFORD AND LIMERICK RAILWAY.

Instructions for working Continuous Automatic Vacuum Brake.

1. In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together, and next to the engine. When the whole train is not fitted, the automatic vacuum brake must not be used for ordinary stoppages, but only in cases of emergency. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake van, or a carriage, with a guard in it, must be the last passenger vehicle in the train, and this guard must apply his hand brake in running into all stations where the train is to be stopped.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine, or by the guard from his van; but in order that this may be done, it is imperative that the flexible connexions between each carriage and between the engine and the train shall be properly coupled up.

3. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made on their journals; they must at all times be ready to apply the *hand brake* should the engineman call by whistle for its assistance.

4. When the automatic vacuum brake is to be used for the ordinary stoppage of trains, it must be by the engineman opening the air valve on the engine, but it must be done gradually, and never suddenly or with full force except in cases of emergency.

5. *In approaching junctions, terminal stations, or stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, the automatic vacuum brake or steam brake must only be used in cases of emergency, the enginemen taking care to reduce the speed of the train so that the train may be brought to a stand by the hand brakes alone.*

6. In the event of a train parting, the guard in the rear portion must at once apply his hand brake, and keep it tightly screwed on until the train is again coupled to the engine.

7. In descending inclines the engineman must, when necessary to reduce the speed, use the automatic vacuum brake in preference to the hand brakes.

8. The head guard, before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman—

1st. That all vehicles throughout the train fitted with the brakes have the flexible pipes properly coupled up.

2nd. That the flexible pipe at the rear of the last brake vehicle is properly placed upon the stop plug.

3rd. That 15 inches of vacuum is indicated by the gauge in the rear van on the train; and,

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

9. The engineman, before starting at the commencement of the journey, and also at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain from the guard the number of vehicles in the train fitted with the brake the flexible pipes of which are coupled up to the engine, and that a vacuum of at least 15 inches is shown by the gauge in the rear van. He must also be careful to see—

That the vacuum pipe of his engine is properly coupled up to the leading vehicle in the train.

That at least 15 inches of vacuum is indicated by the gauge on the engine.

10. If from any cause the engineman is unable to obtain at least 15 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand brakes.

11. Just before coming to a stand, after the application of the automatic vacuum brake at stations, or when stopped on the road, the engineman must use his ejector so as to partially release the continuous brake. This will prevent any rebound of the carriages, and will also enable the engineman to start his train immediately on receipt of the signal to do so.

12. When the pipes between the engine and train are disconnected, the couplings must be placed on the plug stops provided for the purpose. Detached carriages must always have the hose couplings placed on the plug stops.

13. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air valve on the engine, so that there may be no delay in coupling or uncoupling.

14. As india-rubber is dissolved by oil or grease, it is most important that nothing of a greasy nature should be applied to or allowed to reach the piston or piston rod. The only lubrication which is required is a little pure blacklead, which must be placed inside each cylinder by the persons appointed for the purpose. The other part of the brake must be cleaned and oiled by the examiners in the usual way.

15. In the case of vehicles fitted with the combined hand and vacuum brake, the guard must see before starting that the hand brake is screwed "full off," and the handle secured by means of the chain provided for that purpose.

16. It is necessary that the words "continuous brake train" shall be written at the top of the engineman's train bill and guard's report for every train fitted with the automatic vacuum brake. It is also necessary for the engineman to show on his mileage ticket the trains which have been worked by him with a continuous brake during the week.

17. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his train bill, which must be accompanied by a special report giving full particulars of the irregularity.

18. Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever of the brake setter.

19. When vehicles are supplied with connecting pipes only, they must be considered as vehicles without the brake, but the brake connexions must be made as described in clause 2.

20. When vehicles not fitted with a continuous brake, or having connecting pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand brake, and keep it tightly on, either until the train has come to a stand, or the driver has taken off his brake, and is again going forward, as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars which may occur when a powerful brake is applied to the front portion of trains only.

JOHN ROBERTS,
Traffic Manager.

JOHN G. ROBINSON,
Locomotive and Carriage Superintendent.

July, 1889.

3.—CIRCULAR of BOARD OF TRADE to RAILWAY COMPANIES.

Board of Trade, Railway Department,
SIR, 30th August 1877.

I AM directed by the Board of Trade to request that you will call the attention of the Directors of your Company to the paper which has recently been laid before Parliament, containing the correspondence that has taken place between the Board of Trade and the Railway Association relative to the use of continuous brakes, and to state that this Department have been giving further careful consideration to this important question, as will be seen by a reference to the General Report upon Railway Accidents for the year 1876 recently presented to Parliament.

In that Report will be found the details of the circumstances attending all the accidents which have been investigated by the officers of the Board of Trade during the past year; from a careful examination of which and similar information for the past few years, the Board of Trade are led to conclude that three fourths of those accidents might probably have been avoided, or the results materially mitigated, if the passenger trains concerned had been provided with continuous brakes.

In Mr. Leeman's letter of the 18th April, forming part of the correspondence above referred to, it is stated that it is "not essential that one form of brake should be invariably adopted." If by this it is meant that it is desirable to try every form of brake, and that it is not desirable by the exclusive adoption of one form to prevent the trial and introduction of better forms, the Board of Trade would entirely concur. But if it is meant that there would be no advantage in having one form of brake for all lines which interchange traffic with one another, the Board of Trade hold a different opinion; for it appears to them obvious that in the interchange of rolling stock, including ordinary carriages, saloon and family carriages, horse boxes, carriage and fish trucks, and other vehicles forming part of passenger trains, between one line and another, if the brake fittings are not similar, the efficiency of the brakes must be proportionately impaired and that this must be especially the case where the lines of two or more companies are continuous.

The London and North-western, the Great Northern, and the Midland Companies all run through-

trains to Scotland, which are forwarded over the Caledonian, North-eastern, North British, Glasgow and South-western, and Highland Railways. It is therefore obvious that the advantage to be derived from any continuous brake system in use on any of these lines will be diminished and neutralized if at such stations as Carlisle, Glasgow, York, Edinburgh, Perth, and Inverness the traffic is so arranged that carriages with one system of brakes are attached to trains containing carriages fitted with a different system. This evil can only be avoided if those companies which interchange traffic with one another adopt one and the same general system.

The Board of Trade therefore regret to observe from the returns forwarded, in the correspondence above alluded to not only that there is no immediate prospect of the adoption of any such general system even by companies owning continuous lines, but that many of the companies are not taking, and apparently refuse to take, any steps towards that end.

Referring to the merits of the different brakes now in use, or under experiment, as stated in the answers to the questions put by the Board of Trade, it is to be remarked that the statements of the different companies vary considerably, and are scarcely consistent with each other.

Thus the London and North-western Company express themselves satisfied with a mechanical continuous brake, which is reserved for cases of emergency, and which can only be applied throughout the train by the engine-drivers or guards through the intervention of a communication-cord.

No other great company appears to have even tried this brake. On the other hand, many companies speak in the highest terms of air or vacuum brakes, which are rejected in toto by the London and North-western Company. The Great Northern Company have adopted a vacuum brake, which is highly thought of, and which it is stated can be made self-acting, but which, so far as can be learned from the correspondence, does not at present possess that quality. The Midland, North-eastern, North British, and some other companies are stated to have tried or adopted brakes which are self-acting. On the other hand, the Manchester, Sheffield, and Lincolnshire Company seem to think that new elements of danger are produced by the practical operation of continuous brakes, though they do not say what those dangers are. It would be easy, but is scarcely necessary, to dwell at greater length on the different and even discordant views disclosed in the answers of the different companies.

Under these circumstances the Board of Trade whilst recognizing the efforts which some of the companies are making in testing or adopting improved systems of brakes, cannot regard the state of things shown by these papers as satisfactory, inasmuch as it indicates a diversity of opinion and action and in some cases an absence of progress, which, if allowed to continue, will be most injurious to the character of the companies and to the interests of the public. There has apparently been no attempt on the part of the various companies to take the first step of agreeing upon what are the requirements which in their opinion are essential to a good continuous brake.

In the opinion of the Board of Trade these conditions should be as follows:—

a. The brakes to be efficient in stopping trains, instantaneous in their action, and capable of being applied without difficulty by engine-drivers or guards.

b. In case of accident to be instantaneously self-acting.

c. The brakes to be put on and taken off (with facility) on the engine and every vehicle of a train.

d The brakes to be regularly used in daily working.

e. The materials employed to be of a durable character, so as to be easily maintained and kept in order.

The inquiries and experiments instituted by the Royal Commission on Railway Accidents, and the recent researches into the causes of railway accidents during the last few years, appear to the Board of Trade to leave no doubt as to the importance of the above conditions, and the experience which has been obtained by the companies appears sufficient to enable them to come to some general and unanimous conclusion.

There can, therefore, be no reason for further delay, and the Board of Trade feel it their duty again to urge upon the railway companies the necessity for arriving at an immediate decision and united action in the matter.

The companies and their officers, who are as much interested as the public in the safe and efficient working of their railways, and upon whom devolves the adoption of proper systems of brake and of such other improvements as have been proved by past experience to be necessary in the interest of public safety, would do well to reflect that if a doubt should arise that from a conflict of interest or opinion, or from any other cause, they are not exerting themselves, it is obvious that they will call down upon themselves an interference which the Board of Trade, no less than the companies, desire to avoid.

In conclusion I am to call your attention to a notice which has already been given in Parliament for next session, for copies of any further correspondence between the Board of Trade and the Railway Companies with reference to the progress made in brake power; and in order that the Board of Trade may be in a position to furnish that information to Parliament, I am to request that the companies will from time to time furnish the Board with full accounts of any further experiments they may make, and of any steps which they may take for the adoption or extension of improved systems of brakes.

I am, &c.

The Secretary, EDWARD STANHOPE.

Railway Company.

4.—Copy of Act.

(41 Vict. Chapter 20.)

A.D. 1878. An Act to provide for returns respecting Continuous Brakes in use on Passenger Trains on Railways. [17th June 1878.]

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

Short title. 1. This Act may be cited as the Railway Returns (Continuous Brakes) Act, 1878.

Returns to be made twice a year by railway companies to Board of Trade respecting continuous brake.

2. Every railway company shall twice in every year make to the Board of Trade returns respecting the use of continuous brakes on the passenger trains running on the railways worked by such company.

The returns shall contain the particulars and be in the form specified in the schedule to this Act, or shall contain such other particulars and be in such other form as the Board of Trade from time to time prescribe; and the Board of Trade may in any case dispense with any part of the returns where they deem the same inapplicable.

The returns shall be made for the six months ending on the last day of December and the last day of June in every year, or on such other days as the Board of Trade from time to time direct, and shall be made within fourteen days after the expiration of each six months.

Every return shall be signed by the officer of the company responsible for the correctness of the return, and by the chairman or deputy chairman of the directors of the company, or where there are no directors by the individual or one of the individuals bound to make the return.

Any railway company who fail to comply with this section shall be liable on summary conviction before a court of summary jurisdiction to a fine not exceeding five pounds for every day during which the default continues.

Any person who makes or is privy to the making of a return under this Act which is to his knowledge false in any particular shall be liable on summary conviction before a court of summary jurisdiction to a fine not exceeding fifty pounds.

34 & 35 Vict. c. 78. Expressions in this Act have the same meaning as they have in the Regulation of Railways Act, 1871.

SCHEDULE.

Forms of Return (as amended by Board of Trade).

Return for the Six Months ending on the day of 18 of the Amount and Description of Continuous Brake Power in use on the Passenger Trains running on the railways worked by the Railway Company.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company and in use on Passenger Trains on Lines worked by them.	(1.) Whether the brakes are instantaneous in action and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with Continuous Brakes.						Amount of Stock NOT fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Vehicles. Passenger Carriages. Fitted with Brake Gear complete.	Number of Vehicles. Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.	Number of Vehicles. Other Vehicles used for Passenger Trains. Fitted with Brake Gear complete.	Number of Vehicles. Other Vehicles used for Passenger Trains. Fitted only with Chains or Pipes and Connections for connecting the Brake.	Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Train	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains. Fitted with Brake Gear complete.	Number of Passenger Carriages and other Vehicles used for Passenger Trains. Fitted only with Chains or Pipes and Connections for connecting the Brake.	
	(Each description of Continuous Brake to be given.)	*(Replies to these questions to be given for each description of Brake, and also state whether the Brakes are used for every stoppage.)*	*(The amount of stock fitted with each description of Brake to be given.)*								*(The amount of stock for each description of Brake to be given.)*				

No. 2.—Return for the Six Months ending on the day of 18 of all instances in which Continuous Brakes have failed to act when required to be brought into action, or have caused delay in the working of the trains on any railway worked by the Railway Company.

1. Name of Railway Company.	2. Name or description of Brake which failed or caused delay in any of the instances asked for in Column 4.	3. Date of Failure.	4. Instances under the three following heads separately of:— 1. Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. 2. Failure or partial failure to act under ordinary circumstances to stop a train when required. 3. Delay in the working of trains in consequence of defects in, or improper action of, the brakes, distinguishing whether they arose from neglect or inexperience of servants or failure of machinery or material.	5. Number of Miles run by Trains fitted with each description of Continuous Brake.

No. 3.—Return for the Six Months ending on the day of 18 of the Number of Miles run by Passenger Trains not fitted with Continuous Brakes on any railway worked by the Railway Company.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.

RETURN

(In pursuance of the Railway Returns (Continuous Brakes) Act, 1878)

BY

THE RAILWAY COMPANIES OF THE UNITED KINGDOM,

For the Six Months ending the 30th June 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY EYRE AND SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

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EYRE AND SPOTTISWOODE, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or
JOHN MENZIES & Co., 12, Hanover Street, Edinburgh, and 90, West Nile Street, Glasgow; or
HODGES, FIGGIS, & Co., Limited, 104, Grafton Street, Dublin.

1894.

[C.—7544.] *Price* 1*s*.

TABLE OF CONTENTS.

Page

TABLE compiled from the HALF-YEARLY RETURNS of CONTINUOUS BRAKES from June 30th, 1886, to 30th June 1894, showing the progress made in the use of Continuous Brakes, and the Total Amount of Stock not fitted with Continuous Brakes - - - - - - 3

ABSTRACTS of Returns showing the description of Brakes in use on the Railways on 30th June 1894 in the United Kingdom, the amount of stock fitted, and the number of miles run by Trains fitted with each description of Brake, &c., &c. - - - - - 4

No. 1. RETURN for the six months ending on 30th June 1894 of the amount and description of Continuous Brake Power in use on the Passenger Trains running on Railways - - - 6

TABLE showing amount of passenger stock fitted with two or more descriptions of Continuous Brakes - - - - - - - - - - - - - 28

No. 2. RETURN for the six months ending on 30th June 1894 of all cases in which Continuous Brakes have failed to act when required to be brought into action, or have caused delay in the working of Trains on Railways - - - - - - - - 29

No. 3. RETURN for the six months ending on 30th June 1894 of the number of miles run by Passenger Trains not fitted with CONTINUOUS BRAKES on Railways - - - - 66

APPENDIX: STATEMENT forwarded by the London, Brighton, and South Coast Railway Company of cases in which Accidents have been prevented on the London, Brighton, and South Coast Railway by the use of the Westinghouse Brake, during the six months ending 30th June 1894 - - - - - - 71

STATEMENT forwarded by the London, Brighton, and South Coast Railway Company as to the number of times the Westinghouse Continuous Automatic Air Brake was used on the London, Brighton, and South Coast Railway on one particular day during the half year - - - - - - - - - 72

(2) SPECIAL RULES and REGULATIONS relating to the use of Continuous Brakes - - 73

(3) Copy of CIRCULAR of the BOARD OF TRADE, dated 30th August 1877 - - 118

(4) The RAILWAY RETURN (CONTINUOUS BRAKES) ACT, 1878 - - - - 120

Board of Trade,
August 1894.

COURTENAY BOYLE.

TABLE compiled from the HALF-YEARLY RETURNS of CONTINUOUS BRAKES from 30th June 1886, to 30th June 1894 (omitting all the December half-years, and the Brakes not in use during the past half-year), showing the PROGRESS made in the USE of CONTINUOUS BRAKES, and the Total Amount of STOCK NOT FITTED with CONTINUOUS BRAKES.

NAME OF BRAKE.	Amount of Stock fitted as per Return for Six Months ended																NAME OF BRAKE.
	30 June 1886.		30 June 1887.		30th June 1888.		30th June 1889.		30 June 1890.		30 June 1891.		30 June 1892.		30th June 1893.		30th June 1894.		
	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, and other Vehicles.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	Engines.	Carriages, &c.	
Brakes which are returned by the Companies as complying with conditions in Board of Trade circular.																			*Brakes which are returned by the Companies as complying with conditions in Board of Trade circular.*
Automatic vacuum	2,185	11,714	2,581	13,883	3,588	17,750	5,259	23,339	6,319	27,314	7,521	31,519	8,112	36,964	8,876	40,861	7,881	42,836	Automatic vacuum.
Westinghouse automatic	1,706	14,519	1,804	14,652	1,915	14,838	2,041	15,553	2,312	16,345	2,410	17,158	2,570	18,515	2,666	19,276	2,836	19,597	Westinghouse automatic.
Total	3,980	26,853	4,386	28,578	5,504	32,630	7,301	38,931	8,631	43,693	9,931	48,711	10,682	55,479	11,542	60,137	10,717	62,433	Total.
Per-centage of total stock (complying)	or 52 per cent.	or 52 per cent.	or 52 per cent.	or 54 per cent.	or 61 per cent.	or 62 per cent.	or 75 per cent.	or 72 per cent.	or 83 per cent.	or 81 per cent.	or 86 per cent.	or 86 per cent.	or 95 per cent.	or 94 per cent.	or 98 per cent.	or 98 per cent.	or 98·7 per cent.	or 99 per cent.	Per-centage of total stock (complying).
Brakes which appear to comply with only some of the conditions in the circular.																			*Brakes which appear to comply with only some of the conditions in the circular.*
Chain brake (including the brake in use on North London Railway)	688	2,677	764	2,076	770	1,689	778	1,523	778	1,441	807	1,165	82	323	—	14	—	4	Chain brake (including the brake in use on North London Railway).
Fay's, Newall's, and Fay and Newall's.	—	1,609	—	1,001	—	465	—	445	—	378	—	283	—	135	—	110	—	7	Fay's, Newall's, and Fay and Newall's.
Smith's vacuum	1,250	7,773	1,616	8,010	1,529	7,641	841	4,304	471	3,195	295	2,315	125	1,411	5	397	5	19	Smith's vacuum.
W. Parker Smith's automatic	—	3	—	3	—	3	—	3	—	3	—	3	—	3	—	3	—	3	W. Parker Smith's automatic.
Vacuum	657	4,548	970	5,650	560	4,925	205	3,896	100	2,733	103	1,559	93	168	90	34	73	—	Vacuum.
Total and per-centage	2,651 or 35 per cent.	16,385 or 31 per cent.	3,404 or 40 per cent.	17,090 or 32 per cent.	2,913 or 32 per cent.	15,073 or 29 per cent.	1,878 or 20 per cent.	10,521 or 20 per cent.	1,403 or 13 per cent.	8,100 or 15 per cent.	1,259 or 11 per cent.	5,693 or 10 per cent.	300 or 3 per cent.	2,040 or 3 per cent.	95 or 1 per cent.	558 or 1 per cent.	78 or ·7 per cent.	33	Total and per-centage.
Total stock (complying and partly complying) fitted with continuous brakes and per-centage	6,631 or 89 per cent.	43,238 or 83 per cent.	7,790 or 92 per cent.	45,668 or 86 per cent.	8,417 or 93·7 per cent.	47,703 or 91 per cent.	9,179 or 95 per cent.	49,452 or 92 per cent.	10,034 or 96 per cent.	51,793 or 96 per cent.	11,190 or 97 per cent.	54,404 or 96 per cent.	10,982 or 98 per cent.	57,519 or 97 per cent.	11,637 or 99 per cent.	60,695 or 99 per cent.	10,795 or 99·4 per cent.	62,466 or 99 per cent.	Total stock (complying and partly complying) fitted with continuous brakes and per-centage.
Total amount of stock *not* fitted with continuous brakes and per-centage	849 or 11 per cent.	8,552 or 17 per cent.	682 or 8 per cent.	7,140 or 14 per cent.	567 or 6·3 per cent.	4,853 or 9 per cent.	545 or 5 per cent.	4,312 or 8 per cent.	410 or 4 per cent.	2,263 or 4 per cent.	335 or 3 per cent.	2,071 or 4 per cent.	210 or 2 per cent.	1,608 or 3 per cent.	121 or 1 per cent.	734 or 1 per cent.	60 or ·6 per cent.	469 or 1 per cent.	Total amount of stock *not* fitted with continuous brakes and per-centage.

NOTE.—The above return is prepared with the object of showing the progress made for several years. The figures which are given in gross include engines fitted with apparatus for working brakes and vehicles fitted with pipes or connections. For further division, *see* pp. 4 and 5.

83670. Wt. 11400. A 2

ABSTRACT of the RETURNS showing the description of CONTINUOUS BRAKES in use on 30th June 1894 on the Railways in the UNITED KINGDOM, and the AMOUNT of STOCK and the MILEAGE run by Trains fitted with each description of Brake, &c., &c.

Name of Brake.	Name of Railway Company.	Stock fitted.				Number of Thousands of Miles run by Trains fitted.	Proportion per cent.	
		Engines.		Carriages, &c.			Of Vehicles fitted with Brakes.	Of Mileage run by Trains fitted.
		Fitted with Brakes.	Fitted with Apparatus for working the Brakes.	Fitted with Brakes.	Fitted with Pipes, &c.			
1. *The following Brakes are returned by the Companies as complying with the conditions specified in the Circular of the Board of Trade, dated 30th August* 1877. (*For copy of Circular see page* 121.)								
Automatic Vacuum	Barry	7	—	43	—	50	100	100
	Brecon and Merthyr	11	2	49	13	80	79	100
	Cambrian	44	—	202	69	320	70	80
	Cheshire Lines	—	—	478	12	941	97	100
	Corris	2	—	7	—	6	100	100
	Festiniog	8	—	33	26	21	56	100
	Furness	48	—	299	44	381	80	100
	Golden Valley	—	1	3	—	13	75	70
	Great Northern	751	5	3,226	1,028	4,723	99*	100
	Great Western	643	—	5,845	—	9,499	100	100
	Hull, Barnsley, and W. Riding J.	38	—	226	25	174	90	100
	Lancashire and Yorkshire	896	—	3,617	—	4,752	100	100
	London and North-western	1,414	—	7,757	17	9,550	100	100
	L. and N.W. and Caledonian (West Coast Joint Stock).	—	—	406	—			
	London and South-western	579	30	3,451	16	4,976	99	100
	Manchester and Milford	4	—	10	2	24	53	52
	Manchester, Sheff., and Linc.	593	2	1,227	51	1,801	96	100
	Manchester South Junction and Altrincham.	11	—	135	—	115	100	100
	Maryport and Carlisle	14	—	66	12	95	84	100
	Mawddwy	1	—	2	—	8	50	100
	Mersey	9	9	97	3	133	97	100
	Metropolitan	70	—	363	16	944	16	100
	Midland	—	1,251	4,773	379	7,059	80	100
	Midland and Great Northern (Eastern Section).	15	—	55	95	137	35	78
	Midland & South-western Junc.	3	9	37	16	98	61	100
	Neath and Brecon	4	—	11	—	14	100	100
	North-eastern	*6*	*49*	*232*	*540*	13	—	—
	North London	79	—	688	—	921	100	100
	North Staffordshire	64	—	308	160	640	62	100
	Pembroke and Tenby	7	—	26	—	40	100	89
	Pontypridd, Caerphilly, and Newport.	1	—	4	—	6	100	100
	Rhondda and Swansea Bay	9	—	37	1	27	97	100
	Severn and Wye and Severn Bridge.	5	1	17	15	31	53	100
	Somerset Joint Committee	—	58	186	—	294	100	100
	South-eastern	347	—	2,028	72	2,969	96	100
	Taff Vale	47	—	284	10	219	97	100
	Wirral	10	—	42	2	85	95	100
	Wrexham, Mold, & Connah's Quay	8	—	34	—	21	100	100
	Glasgow and South-western	102	—	941	—	1,149	80	68
	Highland	95	—	372	315	517	54	71
	Portpatrick and Wigtownshire Joint.	2	—	1	1	27	50	100
	Belfast and County Down	24	—	163	24	239	87	100
	Belfast and Northern Counties	62	—	282	4	458	98	96
	Cavan, Leitrim, and Roscommon Light.	8	—	128	7	49	95	100
	Clogher Valley	6	—	19	—	49	100	100
	Cork and Macroom	4	—	17	1	35	17	100
	Cork and Muskerry Light	6	—	19	6	67	24	100
	Cork, Bandon, and South Coast	11	—	60	—	107	100	99
	Cork, Blackrock, and Passage	3	—	15	1	32	88	100
	Donegal	6	1	97	—	43	51	78
	Dublin, Wicklow, and Wexford	54	—	230	7	610	97	100
	Dundalk, Newry, and Greenore	5	—	22	—	27	100	100
	Great Northern of Ireland	110	—	584	—	1,041	100	100
	Great Southern and Western	149	—	587	—	1,110	100	100
	Londonderry and Lough Swilly	6	—	22	10	42	69	78
	Midland Great Western	60	—	334	48	675	87	100
	Tralee and Dingle	4	—	45	—	30	100	100
	Waterford and Central Ireland	6	—	33	—	44	100	64
	Waterford and Limerick	34	—	122	60	325	58	97
	Waterford, Dungarvan, and Lismore.	2	—	1	—	—	—	—
	West Carbery	—	4	5	—	10	100	100
	West Clare	7	—	93	4	56	96	100
Westinghouse Automatic.	Colne Valley and Halstead	4	—	15	1	33	88	100
	East and West Junction	3	—	9	5	60	64	100
	Great Eastern	554	—	4,030	3	5,654	100	100

* Excluding fish, &c. waggons fitted with pipes.

Name of Brake.	Name of Railway Company.	Stock fitted. Engines. Fitted with Brakes.	Engines. Fitted with Apparatus for working the Brakes.	Carriages, &c. Fitted with Brakes.	Carriages, &c. Fitted with Pipes, &c.	Number of Thousands of Miles run by Trains fitted.	Proportion per cent Of Vehicles fitted with Brakes.	Proportion per cent Of Vehicles run by Trains fitted.
1. *The following Brakes are returned by the Companies as complying with the conditions specified in the Circular of the Board of Trade dated 30th August 1877.* (*For copy of Circular see page* 121)—continued.								
Westinghouse Automatic—*cont.*	Isle of Wight	8	—	45	—	60	100	100
	Isle of Wight Central	7	—	36	—	77	100	88
	London, Brighton and S. Coast	386	—	2,803	17	3,653	99	100
	London, Chatham, and Dover	196	—	1,108	23	1,796	98	100
	Londonderry	4	—	23	—	20	100	100
	London, Tilbury, and Southend	36	—	305	6	422	98	100
	Metropolitan District	54	—	368	—	759	100	100
	Midland	7	—	234	520	—	5	—
	Midland, Scotch Joint Stock	—	—	85	—			
	Midland and Great Northern (Eastern Section).	11	—	8	55	38	5	22
	North-eastern	675	—	3,488	—	5,844	100	100
	North Staffordshire	—	—	—	26	—	—	—
	N. Wales Narrow Gauge	3	—	9	3	—	60	—
	Rhymney	25	7	82	—	99	100	100
	West Lancashire	11	—	49	5	101	91	100
	Caledonian	367	—	2,379	41	3,522	98	100
	Glasgow and South-western	96	—	241	—	548	20	32
	Great North of Scotland	90	—	724	3	470	99	73
	North British	286	3	2,607	266	3,865	91	100
	Castlederg and Victoria Bridge	3	—	7	23	10	23	100
	Totals	9,334	1,383	58,919	3,514	84,903	94	99
2. *The following Brakes appear to comply with only some of the conditions specified in the Circular above mentioned.*								
Clark and Webb's	Bishop's Castle	—	—	4	—	—	67	—
Fay's	Lancashire and Yorkshire	—	—	5	—	—	—	—
Newall's	Lancashire and Yorkshire	—	—	2	—	—	—	—
Walter Parker Smith's Automatic.	Liskeard and Caradon	—	—	3	—	5	50	100
Smith's Vacuum	South-eastern	—	—	1	—	—	—	—
	Sligo, Leitrim, and Northern Counties.	5	—	15	3	15	75	30
Vacuum	North Staffordshire	13	60	—	—	—	—	—
Totals		18	60	30	3	20	—	—
Total Amount of Stock returned as FITTED with Continuous Brakes to 30th June 1894.		9,352 or 86 per cent.	1,443 or 13 per cent.	58,949 or 94 per cent.	3,517 or 5 per cent.	84,923 or 99 per cent.		
Amount of Stock FITTED with Continuous Brakes during the six months ending 30th June 1894.		330 or 3 per cent.	25	1,208 or 2 per cent.	245			
Amount of Stock NOT FITTED with Continuous Brakes		1,503 including 1,443 engines fitted with apparatus for working the continuous brake, or 14 per cent.		3,986 including 3,517 vehicles fitted with pipes and connections only, or 6 per cent.		Thousands of miles run by trains *not* fitted. 800 or 1 per cent.		

NOTE.—The engines entered above as fitted with apparatus for working the continuous brake, have in most instances steam brakes which are worked in connexion with the continuous brake.

No. 1.

RETURN for the Six Months ending on the 30th day of June 1894, of the AMOUNT running on

NAME OF RAILWAY COMPANY.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	AMOUNT OF STOCK FITTED WITH			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages.	
					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.
ENGLAND AND WALES.						
BARRY -	Smith's automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	7	—	43	—
BISHOP'S CASTLE	Webb's chain -	(1.) Yes, and applied by guard. (2.) Yes. (3.) No; only to passenger vehicles and guard's van. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	4	—
BRECON AND MERTHYR TYDFIL JUNC.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Part of the material is durable, part is not. (6.) Yes.	11	2	47	2
CAMBRIAN - -	Automatic Vacuum -	(1.) Yes. (2.) Yes, (3.) Yes. (4.) Yes. (5.) Yes. (6.) It is believed that in practice the brake is applied at all stations except terminals.	44	—	143	9
CHESHIRE LINES COMMITTEE.	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	Supplied by M. S. & L. and Midland Railway Companies.		414	—
COLNE VALLEY AND HALSTEAD.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	4 tank	—	3 compos. 6 thirds.	1 compo.
CORRIS - - -	Automatic Vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	2 tank	—	6	
EAST AND WEST JUNCTION.	Westinghouse automatic brake.	(1.) Yes. (2.) Yes. (3.) Yes, if fitted. (4.) Yes. (5.) Yes. (6.) Yes.	3	—	9	—
FESTINIOG - -	Automatic Vacuum -	(1 to 6.) Yes - - - -	8	—	28	26
FURNESS -	Automatic Vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	48	—	240	1
GARSTANG AND KNOT END.	No continuous brakes	- - - - - -	—	—	—	—
GOLDEN VALLEY -	Automatic Vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	1	3	—

NOTE.—*In Return No. 1 the amount and description of stock fitted with two or more descriptions of continuous*

No. 1.

and Description of Continuous Brake Power in use on the Passenger Trains Railways.

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
—	—	—	—	—	—	—	—	—
—	—	2	2	—	—	—	—	—
2	11	—	—	2	—	—	—	—
59	60	11	15	13	—	—	24	— For special rules *see* Appendix.
64	12	—	—	—	—	5	—	—
5 vans 1 horse box.	—	—	1 compo.	—	—	—	—	Usual Westinghouse rules.
1	—	—	—	—	—	2	—	Automatic Vacuum Brake Company's rules. The brake is not to be used for stopping at terminal stations except on emergency.
—	2 horse boxes 1 hound van 2 cattle trucks.	—	—	—	—	—	—	—
5	—	1 under reconstruction.	—	—	—	—	—	Vacuum Brake Company's Rules.
43 vans 16 fish trucks.	12 carriage trucks, 21 horse boxes, 10 meat vans	—	28	—	—	—	—	— For special rules *see* Appendix.
—	—	2	4	—	—	—	—	—
—	—	—	1	—	—	—	—	—

brakes or pipes and connections are printed in italics and not included in total on pp. 26 and 27. For Summary, see p. 28.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Great Eastern -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	554 engines, 252 tenders. *42 are also fitted with apparatus for applying vacuum brake.*	—	2,942 *35 of these are fitted with the vacuum brake gear complete and 44 with vacuum pipes.*	—
Great Northern -	Vacuum automatic -	(1.) The brakes are instantaneous in action and capable of being applied by driver and guards. (2.) No. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	751 engines, 599 tenders.	5 engines, 5 tenders.	2,107 G.N. 190 East Coast Joint Stock, 2 Pullman cars.	11
	Westinghouse automatic.	*As above* - - - -	—	—	*281 G. N., 190 East Coast Joint Stock. 2 Pullman cars.*	*248 G.N.*
Great Western -	Automatic vacuum (Sanders and Bolitho's).	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	643	—	4,479 (6 are also fitted with Westinghouse brake.)	—
Hull, Barnsley, and West Riding Junction.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	38 engines, 32 tenders.	—	85	—
Isle of Wight -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	36	—
Isle of Wight Central.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	7	—	32	—
Lancashire and Yorkshire.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	218 tender, 231 tank, and 447 goods engines for ordinary and special passenger work if required.	—	2,487 and 702 duplicates.	—
	Fay's - -	(1.) Yes, and can be made capable of being applied by driver and guard. (2.) No. (3.) Yes, but they are never applied to more than 5 carriages of a train. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	2	—
	Newall's - -		—	—	—	—

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
1,088 *779 of these are also fitted with vacuum pipes.*	3	—	—	16 engines. 5 tenders.	—	56	—	Drivers are not to rely on continuous brakes when approaching junctions or terminal stations.
315 G.N. 39 East Coast Joint Stock, 573 horse boxes, carriage trucks, and waggons.	8 horse boxes, 9 carriage trucks, and 1,000 waggons.	—	—	21 engines, 19 tenders.	—	28 G.N. passenger carriages, 9 luggage, 104 horse boxes, carriage trucks, &c., 6 E.C.J.S., 4 do. luggage.	84 waggons	*See* Appendix.
197 luggage, &c., vans. 39 East Coast Joint Stock	*778 vehicles.*	—	—	—	—	*108 passenger carriages and 66 luggage, &c. vans. 6 E.C.J.S. passenger carriages, 4 luggage vans, &c.*	*23 passenger carriages and 5 luggage vans.*	—
Note.—*The stock shown as fitted with the Westinghouse brake is included above.*								
1,366 (*10* are also fitted with Westinghouse brake and *40* with Westinghouse pipes and connections.)	—	—	—	11 engines, 80 goods, altered to enable brake to be applied by guard.	—	48	—	For regulations *see* Appendix.
141	25	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—
4	—	—	—	3	—	—	—	Westinghouse Brake Rules.
369 and 59 duplicates.	—	—	14	20 passenger tank engines, 15 goods tender engines.	—	55 and 10 duplicates.	—	For copy of printed instructions, *see* Appendix.
3	—	—	—	—	—	—	—	Are not allowed to skid.
2	—	—	—	—	—	—	—	

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Lancashire and Yorkshire—*cont.*	Automatic vacuum and Westinghouse.	(1.) Yes. (2.) Yes. (3.) Yes. Yes. (5.) Yes. (6.) Yes.	—	—	*59* Note.— *51 carriages and 47 other vehicles fitted with complete vacuum automatic brake gear, also the Westinghouse pipe, are included in the number of vehicles fitted with the vacuum automatic brake.* 74 waggons fitted with automatic vacuum brake gear complete and 11 waggons fitted with automatic vacuum pipes only, and 4 fitted with the Automatic vacuum and Westinghouse brake gear complete.	—
Liskeard and Caradon.	Walter Parker Smith's automatic.	(1.) Yes, by guard only. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	3	—
London and North-Western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	1,414 889 engines and tenders and 525 tank engines are fitted with continuous brakes which can be actuated by the guard or in case of a break-away will be applied automatically.	—	5,365 (*292 of these are also fitted with the Westinghouse brake.*)	—
London and North-Western and Caledonian. (West Coast.)	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	See Note A.		266 C.	—
London and South-Western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	579 engines and 428 tenders.	30 engines	2,186	—
	Westinghouse -	*(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.*	*6 engines* and tenders.*	—	—	*21**

* *This stock is used for interchange traffic only, and*

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
113 and *3 duplicates.*	—	—	—	—	—	15	—	—
—	—	3	3	—	—	—	—	—
2,392 (*39 of these are also fitted with the Westinghouse brake.*)	17	—	—	58	—	202	—	For special rules *see* Appendix.
140 C.	—	See Note A.		See Note A.		—	—	Same as L. & N.W.
		Note A.—There are no joint engines and tenders, the carriages being worked in the ordinary trains over each Company's line by its own engines and tenders. Note B.—This Return applies to West Coast passenger carriages and other vehicles, so far only as they run over the London and North-western Railway to or from Carlisle. The Caledonian Company will make a separate return of the same stock in respect of their railway north of Carlisle. Note C.—*All these vehicles are fitted with the Westinghouse automatic pressure brake also.*						—
1,265	16	—	—	12 engines and 6 tenders.	1	70	—	For instructions *see* Appendix.
—	*204**	—	—	—	—	—	*21**	—

**is also fitted with the automatic vacuum brake.*

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
London, Brighton, and South Coast.	Westinghouse continuous automatic air.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	261 tank, 125 tender. (These include a number of goods engines which occasionally work passenger trains, *and 15 engines fitted with automatic vacuum.*)	—	2,139	4
London, Chatham, and Dover.	Westinghouse automatic air.	(1.) The brakes are practically instantaneous in action, and can be applied by engine-driver and guards. (2.) Yes. (3.) Yes. (4.) Yes. (5.) The materials generally are of a durable character, except the india-rubber coupling connections. (6.) Yes.	104 engines and tenders, 92 tank engines. (*11 of the engines and tenders are also fitted with apparatus for applying the automatic vacuum brake.*)	—	909 (*12 also fitted with automatic vacuum brake complete, and 5 with pipes only*).	—
Londonderry -	Westinghouse automatic.	(1.) Instantaneous in action. Can be applied by driver and guard. (2.) Self-acting. (3.) Can be applied to every vehicle of a train. (4.) In daily use. (5.) The materials are of the best kind and kept in order. (6.) Yes.	4 tank engines.	—	21	—
London, Tilbury, and Southend.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	36	—	297	—
Manchester and Milford.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	4	—	7	1
Manchester, Sheffield, and Lincolnshire.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	232 and 361* goods engines.	2	1,024	—
Manchester South Junction and Altrincham.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	11	—	133	—
Maryport and Carlisle.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, but not depended upon at terminal stations.	14 engines. 14 tenders.	—	52	—
Mawddwy -	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) No.	1	—	1	—

* Available for passenger trains

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
664	13 *and 285 vehicles fitted with vacuum pipes.*	—	—	6 tank engines Brake taken off 3 tender engine.	—	72 Brakes taken off 71 vehicles.	Pipes taken off 1 vehicle.	*See* Appendix.
199 (*21 vehicles are also fitted with automatic vacuum brake pipes*).	2 lamp carriages, 21 waggons.	—	—	—	—	—	1	*See* Appendix.
2 vans	—	—	—	—	—	2	—	Ordinary rules.
8	6	—	—	—	—	—	—	*See* Appendix.
3	1	—	7	—	—	—	—	—
203	51	—	—	20	—	51	—	*See* Appendix.
2	—	—	—	—	—	—	—	The engine-driver must not depend entirely upon the action and power of the brake, but when approaching terminal stations or junctions must have his train so well under control, that it may be brought to a standstill with the hand brake without the use of the vacuum automatic brake, except in cases of emergency. Guards must be at their hand brakes when passing the distant signal for a terminal station, and by the application of their brake assist the drivers to pull up the trains wherever necessary. Guards must keep a vigilant look out for signals, &c., as usual, and be prepared to use their hand brake or the vacuum automatic brake, if necessary.
10 brake vans. 4 horse boxes.	2 horse boxes. 6 carriage trucks. 4 cattle waggons.	—	—	—	—	—	—	Automatic brake not to be used for stopping at terminal stations.
1	—	1	2	—	—	—	—	—

as occasion may require.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages.	
					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.
Mersey - -	The vacuum continuous automatic brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	9 tank engines.	9 tank engines fitted with a steam brake arranged to work automatically with continuous brakes.	97	—
Metropolitan -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	70 tank engines.	—	354	—
Metropolitan District.	Westinghouse automatic brake.	(1.) Yes. Can be applied by driver and guard. (2.) Yes, in case of breakaway. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Not depended upon when entering a terminus.	54 engines	—	368	—
Midland - -	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	—	1,251 including 234 tank engines. (All have automatic steam brakes to engine and tender wheels combined with vacuum automatic brake for train.)	3,051	1
	Westinghouse automatic air.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	7 (*All are fitted also with apparatus for working the vacuum automatic brake.*)	—	164	39
	Westinghouse automatic air brake on Midland Scotch Joint Stock.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	—	—	65	—
Midland and Great Northern Joint (Eastern Section).	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	13 engines and tenders, 2 tank engines.	—	55	—
	Westinghouse automatic air brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	9 engines and tenders, 2 tank engines. (*4 of these are are also fitted with Automatic vacuum brake for train only*).	—	8	—
Midland and South-Western Junction.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	3	9	26	—
Neath and Brecon	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) No. (5.) Yes. (6.) Yes.	4	—	10	—

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.						Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.							
—	2 vans 1 truck.	—	—	—	—	—	—	*See* Appendix.
6 brake vans 3 horse boxes.	14 gas-holder trucks, 2 goods waggons.	—	—	—	—	—	—	*See* Appendix.
—	—	—	—	—	—	—	—	*See* Appendix.
1,722 (including 119 goods vehicles).	378 (including 377 goods vehicles).	—	—	—	18 including 1 tank engine (all fitted with automatic steam brake to engine and tender wheels combined with vacuum automatic brake for train).	54 (including 51 goods vehicles).	—	*See* Appendix.
70	481 (including 15 goods vehicles).	—	—	—	—	—	2	*See* Appendix.
20	—	—	—	—	—	—	—	—
—	95	—	—	4 engines and tenders, and 2 tank engines.	—	24	65	*See* Appendix.
—	*58 (fitted also with automatic vacuum pipes).*	—	—	—	—	—	—	*See* Appendix.
11	16	—	—	2	2	12	—	—
1	—	—	—	—	—	—	—	—

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
North-Eastern -	Westinghouse automatic.	(1.) Practically instantaneous, and can be applied by either engine-driver or guards. (2.) It is self-acting. (3.) It is capable of being applied to every vehicle of a train. (4.) It is in regular use in daily working. (5.) The materials used are generally of a durable character, easily maintained, and kept in order. (6.) The brake is used for every stoppage, except when entering a platform with a buffer-stop at the end or at which another train is standing.	506 engines, 311 tenders. 169 goods engines. *See* statement below.	—	2,540	—
	Vacuum automatic brake.	*(1.) Not instantaneous, and can be applied by either engine-driver or guards. (2.) It is self-acting. (3.) It is capable of being applied to every vehicle of a train. (4.) It is in occasional use. (5.) The materials are to a considerable extent of a durable character, easily maintained and kept in order. (6.) The brake is used for every stoppage, except when entering a platform with a buffer-stop at the end or at which another train is standing.*	*6 engines, 6 tenders.*	*49 engines, 49 tenders.*	*160*	*57*

Note.—*The stock fitted with this automatic vacuum brake is included in stock fitted with Westinghouse brake.*

Supplementary Statement to the above No. 1 Return.—The Company have 169 goods engines which run excursion and other occasional passenger trains, and these are fitted with the Westinghouse brake gear complete; *3 of them are also fitted with the vacuum automatic apparatus for working the brake on the train only.* (10 of these, and 15 with the Westinghouse, have been fitted during the above six months.)

North London -	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	64 standards 15 duplicates.	—	*Standards.* 1st class - 120; 2nd class - 132; 3rd class - 138; Composites - 50; Brake-vans - 86; = 526	
					Duplicates. 1st class - 22; 2nd class - 37; 3rd class - 61; Composites - 16; Brake-vans - 26; = 162	
North Staffordshire.	Vacuum - -	(1.) Yes. Driver only. (2.) No. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	13 tender engines, with vacuum brake on tender and steam brake on engine.	60 (33 tank engines and 27 goods tank engines) fitted with steam brakes.	—	—
	Westinghouse -	(1.) Yes. Driver only. (2.) No. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	—	—	—	10

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.						Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.							
948	—	—	—	50 engines, 40 tenders.	—	5 other vehicles.	—	*See* Appendix.
		Note.—The carriages above referred to do not include those belonging jointly to the East Coast companies which mainly compose the express and fast trains running between London and Scotland, and which are fitted with continuous brakes.						
72	*483*	—	—	—	*4 engines, 4 tenders.*	*4 carriages,* 5 other vehicles.	—	*See* Appendix.
The Company have 1,380 vehicles (which are not included in their passenger stock, but which run occasionally with passenger trains) fitted with brakes or brake connecting pipes, as below :— 12 with Westinghouse brake complete and automatic vacuum connecting pipes. *35 with Westinghouse and vacuum brakes complete.* 11 with Westinghouse brake gear complete. *1,139 with Westinghouse and automatic vacuum brake connecting pipes.* 183 with Westinghouse brake connecting pipes. 1,380 Total.								
—	—	—	—	—	—	3rd class 6	—	*See* Appendix.
—	—	—	—	—	2 passenger and 1 goods tank-engines fitted also with steam-brake.	—	—	*See* Appendix.
—	16	—	—	—	—	—	—	—

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
North Staffordshire—*cont.*	Automatic vacuum -	(1.) Yes; applied by driver and guard. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	64 engines and tenders with steam brake on engine and automatic brake on tender.	—	216	59
North Wales Narrow Gauge.	Westinghouse automatic continuous brake is in process of being fitted to the rolling stock.	(1.) Yes. (2.) Yes. (3.) To every vehicle except three small coaches. (4.) Generally when possible. (5.) Yes. (6.) Yes.	3 tank engines	—	9	3
Pembroke and Tenby.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	7 engines, 4 tenders.		20	—
Pontypridd, Caerphilly, and Newport.	Vacuum automatic -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	1	—	4	—
Ravenglass and Eskdale.	No continuous brakes.	——	—	—	—	—
Rhondda and Swansea Bay.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	9 tank	—	36	—
Rhymney - -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	19 tank engines, 6 tender engines. Brake applied to engine and tender wheels.	7	63	—
Severn and Wye and Severn Bridge.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, except in the case of mixed trains. (4.) Yes. (5.) Yes. (6.) Yes.	5	1	16	2

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
92	101	—	—	2 goods tender engines with steam-brake on engine, and automatic vacuum-brake on tender.	—	3 new vehicles and 17 converted from simple vacuum and pipes only to automatic complete.	2	—
—	—	—	3	—	—	—	—	—
6	—	—	—	2 engines, 1 tender.	—	1	—	—
—	—	—	—	—	—	—	—	—
—	—	2	4	—	—	—	—	—
1 horse-box	1 low-sided carriagetruck.	—	—	—	—	—	—	—
9 partly brake vans and partly 3rd class. 8 brake vans. 1 carriage truck, 1 horse-box.	—	—	—	1 tank engine	—	5	Guards and drivers are at all times to satisfy themselves that the brake is in proper order, and to make use of the continuous brake on every occasion for regulating the stoppage of trains. On approaching terminal stations the continuous brake must only be used in cases of emergency, the driver taking care to reduce the speed of his train so that it can be brought to a stand by the hand brake of the engine or tender alone.	
1	13	—	—	—	—	—	—	The ordinary regulations as to application of the vacuum brake.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
Somerset and Dorset Joint Committee.	Automatic vacuum	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Some of the materials are durable, others not. (6.) Yes.	— (16 tank engines, all fitted with automatic steam brakes to engine and tender wheels combined with automatic vacuum brake for train.)	58	130 (*5 have connecting pipes for Westinghouse brake.*)	—
South-Eastern -	Automatic vacuum -	(1.) Instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Self-acting. (3.) Yes. (4.) Yes. (5.) Some durable, others not very durable. (6.) Not used at terminal stations.	347 engines, 247 tenders. (*6 engines are also fitted with Westinghouse pumps and pipes.*)	—	1,536	1
	Smith's vacuum -	(1.) Nearly instantaneous in action, and capable of being applied by engine-driver only. (2.) Not self-acting. (3.) Yes. (4.) Yes. (5.) Some durable, others not very durable. (6.) Not used at terminal stations.	—	—	1 Royal Saloon at Boulogne.	*1 excluding 647 vehicles also fitted with automatic brake.*
Southwold - -	No continuous brakes	——	—	—	—	—
Taff Vale - -	Vacuum automatic -	(1.) Yes (2.) Yes. (3.) Yes. (4.) Yes (5.) Yes. (6.) Yes.	47 engines, 6 tenders.	—	216	—
Talyllyn - -	No continuous brakes.	——	—	—	—	—
West Lancashire -	Westinghouse automatic continuous.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	11 engines 7 tenders.	—	42	1
West Somerset Mineral.	No continuous brakes.	——	—	—	—	—
Wirral - -	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	10	—	30	—
Wrexham, Mold, and Connah's Quay.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	33	—
		Total for England and Wales -	7,739	1,435	36,191	171

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
56	—	—	—	—	—	—	—	*See* Appendix.
492	71	—	10 (exclusive of 72 fitted with through pipes for connecting the automatic brake). *59 of the 72 are also fitted with through pipes for simple vacuum brake and included in the quantity shown below.*	3 engines, 3 tenders.	—	105	—	—
—	*59 (besides 62 vehicles fitted with automatic brake.)*	—	—	—	—	—	—	—
—	—	3	26	—	—	—	—	—
68	10 cattle vans.	—	—	1 engine	—	—	10 cattle vans.	20 inches of vacuum is maintained and for station stops this is worked down to 13 inches, the balance being available for emergencies.
—	—	2	5	—	—	—	—	The brake is used for every stoppage.
7	4	—	—	—	—	—	—	—
—	—	1*	3*	—	—	—	—	—
12	2	—	—	—	—	—	1	—
1	—	—	—	—	—	—	—	The usual rules for working automatic vacuum brake.
12,593	2,522	28	128	264	24	971	189	

* Since fitted.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
SCOTLAND.						
Caledonian - -	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) *See* rules.	295 tender and 72 tank engines.	—	1,592	—
	Vacuum and Westinghouse combined.	*(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes.* (6.) *See rules.*	—	*9 engines and tenders fitted to work automatic vacuum.*	*90*	—
Glasgow and South-Western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) No restriction regarding use of brakes except when stopping at terminal stations.	80 and 22 tank	—	597 *(35 of these are also fitted to work the Westinghouse automatic brake).*	—
	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) No restriction regarding use of brakes except when stopping at terminal stations.	92 and 4 tank	*(Of the foregoing 88 engines and tenders and 4 tank engines are fitted to work automatic vacuum braked trains.)*	213	—
Great North of Scotland.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, terminal stations excepted.	74 and 16 tank	—	393	—
Highland -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	95	—	239	—
	Westinghouse -	*(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.*	—	*2**	*26**	*14**
North British -	Westinghouse automatic air.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	286 (199 engines have air brake fitted to wheels of engines and tender, 81 tank-engines to wheels of engine, and 6 engines to wheels of tender only).	3	2,078	3
Portpatrick and Wigtownshire Joint Committee.	*The stock working on these railways is provided by the Caledonian and Glasgow and South-Western except* - - - - - - -		2	—	1	—
		Total for Scotland - -	1,038	3	5,113	3

* These are fitted with

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
787 brake-vans, horse-boxes, &c.	41 brake vans, horse-boxes, &c.	—	—	13	—	22 carriages, 11 brake-vans, &c.	—	*See* Appendix.
511	*14*	—	—	—	—	*3 carriages, 11 brake-vans, &c.*	—	Do.
344 (*Of these 12 brake vans, 20 horse boxes, and 17 carriage trucks, 1 corpse van, 1 post office van and 16 meat vans are also fitted with the Westinghouse automatic brake*).	—	—	—	4	—	75 (Of these 3 horse boxes and 14 meat vans were also fitted with the Westinghouse brake).	—	*See* Appendix.
28	—	—	—	—	—	—	—	—
331	3	—	—	—	—	8	—	*See* Appendix.
133	315	3	—	2	—	2	—	—
*11**	*358* (*7 with vacuum brake complete and 351 with piping*).	—	—	—	—	—	*50*	—
529	263	—	—	16	—	56	—	*See* Appendix.
Railway Companies, is all fitted with continuous brakes, and included in the return to the Board of Trade supplied by those Companies								
—	1	—	—	—	—	—	—	—
2,152	623	3	—	35	—	174	*50*	

vacuum-brake complete.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages. Fitted with Brake Gear complete.	Number of Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.
IRELAND.						
Ballycastle -	No continuous brakes.	——	--	—	—	—
Belfast and County Down.	Vacuum automatic -	(1.) to (5.) Yes. (6.) Yes, except at terminal stations.	24 engines. 14 tenders.	—	141	—
Belfast and Northern Counties.	Vacuum automatic	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except at terminals.	45 engines and 17 goods engines for ordinary and special passenger work if required.	—	212	2
Bessbrook and Newry.	Continuous brakes not adaptable to electric cars.	——	—	—	—	—
Castlederg and Victoria Bridge.	Westinghouse automatic.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	3	—	5	--
Cavan, Leitrim, and Roscommon Light.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	8	—	12	—
Clogher Valley -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	6	—	13	—
Cork and Macroom Direct.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except terminals.	4 tank engines	—	13	1
Cork and Muskerry Light.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, to all carriages used for the conveyance of passengers. (4.) Yes. (5.) Yes. (6.) Yes, except terminals.	6 tank	—	19	—
Cork, Bandon, and South Coast.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) On some trains. (4.) Yes. (5.) Yes. (6.) Yes, except for terminals.	11 tank	—	32	—
Cork, Blackrock, and Passage.	Automatic vacuum -	(1.) Action of brakes almost instantaneous, and capable of being applied by engine driver or guard. (2.) Self-acting. (3.) Applied to every vehicle in train. (4.) In regular use in daily working. (5.) Materials good, easily kept in order. (6.) Used every stoppage, except terminals.	3	—	13	1
Donegal, Section I., Strabane to Stranorlar.	——	——	Engine power supplied by Great Northern Railway Company (Ireland), whose engines are fitted with automatic brakes.		—	--
Donegal, Section II., Stranorlar to Killybegs.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	6	1	17	--

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				
Vehicles.								
Other Vehicles used for Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.		Special Rules under which the Continuous Brakes are worked.
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
—	—	3	11	—	—	—	—	—
1 carriage truck, 9 brake-vans, 8 horse-boxes, and 4 waggons.	24 waggons	—	—	—	—	—	—	As issued by the Vacuum Brake Company, Limited
70	2	—	—	—	—	8 & 11 altered from pipes to brakes.	—	*See* Appendix.
—	—	2 electro-motive passenger cars.	1 car and 1 van, 27 goods waggons.	—	—	—	—	—
2 vans	23 goods and cattle waggons.	—	—	—	—	—	—	—
110 waggons, 6 brake-vans.	3 ballast, 2 timber trucks, 2 horse-boxes.	—	—	—	—	—	—	*See* Appendix.
6 brake vans	—	—	—	—	—	—	—	—
4	—	—	1 van, 83 waggons.	—	—	1 van.	—	Vacuum brake is not to be used for ordinary stoppages on mixed trains of more than six waggons, but it is, however, to be coupled up, and a vacuum maintained to be used in case of emergency.
—	6 vans	—	54 goods and cattle waggons.	—	—	—	—	Ordinary rules of Automatic Vacuum Brake Co.
10 vans, 4 horse-boxes, 2 carriage trucks, 12 waggons.	—	1 tank (in shop to be fitted).	—	—	—	1 carriage and 12 waggons.	—	*See* Appendix.
2	—	—	1	—	—	1	2	*See* Appendix.
—	—	—	5 carriages and 29 waggons.	—	—	—	—	—
2 horse-boxes, 3 carriage trucks, 5 cattle waggons, 70 goods waggons.	—	2	11 carriages and 48 waggons.	—	1	—	—	—

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company, and in use on Passenger Trains on Lines worked by them.	(1.) Whether the Brakes are instantaneous in action, and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of durable character, easily maintained, and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with			
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Enginesand Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages.	
					Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.
Dublin, Wicklow, and Wexford.	Automatic vacuum brake.	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	31 tank and 28 tender engines.	—	174 carriages, 28 vans, and 2 post office sorting vans.	7 carriages
Dundalk, Newry, and Greenore.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	5	—	12	—
Great Northern -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes.	110	—	398	—
Great Southern and Western.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except terminals.	92 57 goods engines.	—	325	—
Londonderry and Lough Swilly.	Automatic vacuum -	(1.) Instantaneous. (2.) Yes. (3.) All passenger vehicles and luggage vans. (4.) Yes. (5.) Yes. (6.) Yes.	6	—	18	—
Midland Great Western of Ireland.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, except to those fitted with pipes only. (4.) Yes. (5.) Yes. (6.) Yes, except at junctions and terminals, when hand-brakes only are used.	60	—	182	—
Sligo, Leitrim, and Northern Counties.	Smith's vacuum -	(1.) Yes, fairly so; applied by drivers only. (2.) No. (3.) Yes, if all are coupled. (4.) Yes. (5.) Yes. (6.) Yes.	5	—	15	—
Tralee and Dingle Light.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes invariably.	4	—	10	—
Waterford and Central Ireland.	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes, to all passenger vehicles on the trains. (4.) Yes. (5.) Yes. (6.) Yes.	6	—	21	—
Waterford and Limerick.	Automatic vacuum -	*See* copy Rules - - -	34	—	69	—
Waterford and Tramore.	No continuous brakes.	——	—	—	—	—
Waterford, Dungarvan, and Lismore.	Automatic vacuum -	——	2 engines and tenders.	—	—	—
West Carbery -	Automatic vacuum -	(1.) Instantaneous. Driver only. (2.) Yes. (3.) On passenger cars only. (4.) Yes. (5.) Yes. (6.) Yes, and on gradients.	—	4	5	—
West Clare -	Automatic vacuum -	(1.) Yes. (2.) Yes. (3.) Yes. (4.) Yes. (5.) Yes. (6.) Yes, except at terminals.	7 tank.	—	18	—
		Total for Ireland - - -	575	5	1,754	11
		* Total for the United Kingdom	9,352	1,443	43,058	185

* Note.—These totals are the numbers of engines and carriages returned by the railway companies as fitted with continuous brakes. It will be observed, however, that some of the brakes so returned but very imperfectly fulfil that designation.

Continuous Brakes.		Amount of Stock not fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
Vehicles.						Number of Passenger Carriages and other Vehicles used for Passenger Trains.		
Other Vehicles used or Passenger Trains.		Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Trains.	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.	
Fitted with Brake Gear complete.	Fitted only with Chains or Pipes and Connections for connecting the Brake.							
15 horse-boxes, 5 carriage trucks, and 6 perishable goods vans.	—	—	—		—	1 carriage and 2 post office sorting vans.	—	—
10	—	—	—	—	—	—	—	Same as L. & N.W.
186	—	—	—	20	—	6	—	—
262	—	—	—	7 goods engines	—	3	—	*See* Appendix.
4	10	—	—	—	—	—	—	—
57 brake-vans, 60 horseboxes, 31 cattleboxes, 4 P.O. vans.	24 fish vans, 24 carriage trucks.	—	—	—	—	6 fish vans, now cattle boxes.	—	*See* Appendix.
—	3	1	2	—	—	—	—	—
35	—	—	—	—	—	—	—	—
12	—	—	—	1	—	1	—	*See* Appendix.
20 vans, 8 horse-boxes, 25 perishable traffic vans.	49 waggons, 7 horse-boxes, 4 carriage trucks.	11	28	3 Includes 2 new engines.	—	6 carriages, 3 vans. Includes 3 new carriages.	3 carriage trucks.	*See* Appendix.
—	—	4	15 carriages and 2 composite brake-vans and 1 guard's van.	—	—	—	—	—
1 brake van	—	4 tender, 1 tank.	18 carriages and 3 vans.	—	—	1 brake van	—	—
—	—	—	—	—	—	—	—	—
75	4	—	—	—	—	—	1 goods waggon.	—
1,146	187	29	341	31	1	63	6	
15,891	3,332	60	469	330	25	1,208	245	

EXTRACT from the FOREGOING RETURN showing the NUMBER of ENGINES, PASSENGER and other VEHICLES used for PASSENGER TRAINS which were fitted with TWO or MORE descriptions of CONTINUOUS BRAKES to provide for running Through Trains, and for interchange of Traffic.

NAME OF RAILWAY COMPANY.	Name of Brakes fitted to the Stock enumerated in Columns 4 to 7.		AMOUNT OF STOCK FITTED WITH BRAKES IN DUPLICATE.			
			Engines fitted complete.	Engines fitted with Apparatus for working the Brake.	Vehicles fitted complete.	Vehicles fitted with Pipes and Connections only.
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
GREAT EASTERN	Westinghouse automatic	Vacuum	—	42	35	823
GREAT NORTHERN	Automatic vacuum	Westinghouse	—	—	709	1,026
GREAT WESTERN	Automatic vacuum	Westinghouse	—	—	16	40
LANCASHIRE AND YORKSHIRE	Automatic vacuum	Westinghouse	—	—	189	101
LONDON AND NORTH-WESTERN.	Automatic vacuum	Westinghouse	—	—	331	—
WEST COAST JOINT STOCK	Automatic vacuum	Westinghouse	—	—	406	—
LONDON AND SOUTH-WESTERN.	Automatic vacuum	Westinghouse	6	—	—	225
LONDON, BRIGHTON, AND SOUTH COAST.	Westinghouse	Automatic vacuum	15	—	—	285
LONDON, CHATHAM, AND DOVER.	Westinghouse	Automatic vacuum	—	11	12	26
MIDLAND	Westinghouse	Automatic vacuum	—	7	—	—
MIDLAND AND GREAT NORTHERN.	Westinghouse (pipes and connections only).	Automatic vacuum	—	4	—	58
NORTH-EASTERN	Westinghouse automatic	Automatic vacuum	6 —	49 13	232 35	552 —
	Westinghouse (pipes and connections only).	Automatic vacuum	—	—	—	1,139
NORTH STAFFORDSHIRE	Automatic vacuum	Westinghouse	—	—	—	26
SOMERSET AND DORSET	Automatic vacuum	Westinghouse	—	—	—	5
SOUTH-EASTERN	Automatic vacuum	Smith's vacuum		—	—	679
	Automatic vacuum (pipes and connections only).	Smith's vacuum	—	—	—	59
	Automatic vacuum	Westinghouse	—	6	—	—
CALEDONIAN	Westinghouse automatic	Vacuum	—	9	601	14
GLASGOW AND SOUTH-WESTERN.	Westinghouse automatic	Automatic vacuum	—	92	102	—
HIGHLAND	Automatic vacuum	Westinghouse	—	2	37	14
	Westinghouse (pipes and connections only).		—	—	7	351
		TOTAL	27	235	2,712	5,423

No. 2.

RETURN for Six Months ending on the 30th day of June 1894, of all CASES in which CONTINUOUS BRAKES have failed to act when required to be brought into Action, or have caused delay in the working of trains on Railways.

No. 2.

RETURN for Six Months ending on the 30th day of June 1894, of all CASES in which CONTINUOUS BRAKES have failed to act when required to be brought into Action, or have caused delay in the working of trains on Railways.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay in any of the instances asked for in Column 4.	3. Date of Failure.	4. Instances under the three following heads separately, of :— 1. Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. 2. Failure or partial failure to act under ordinary circumstances to stop a train when required. 3. Delay in the working of trains in consequence of defects in, or improper action of, the Brakes, distinguishing whether they arose from neglect or inexperience of servants, or failure of machinery or material.	5. Number of Miles run by Trains fitted with each description of Continuous Brake.
ENGLAND AND WALES.				
Barry - -	—	No failures reported.	—	Automatic Vacuum Brake. 50,271 miles.
Brecon and Merthyr -	—	No failures reported.	—	Vacuum Automatic Brake. 79,818 miles.
Cambrian - -	—	No failures reported.	—	Automatic Vacuum Brake. 320,154 miles.
Cheshire Lines Committee.	The Vacuum Automatic. (Engines supplied by Manchester, Sheffield, and Lincolnshire and Midland Railway Companies. *See* Return No.1.)		1. and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	Automatic Vacuum Brake. 941,584 miles.
		Jan. 4	7 p.m. train. Southport to Manchester. Delayed at Altcar. Coupling pipe at rear of carriage No. 82 not properly seated owing to frost, causing leakage.	
		„ 6	9.55 a.m. Wigan to Manchester. Delayed at Flixton and Urmston. Difficulty in releasing brake. Ball-valve frozen on engine No. 159.	
		June 28	5.25 p.m. Godley to Liverpool. Delayed on journey. Tender piston sticking, owing to collapsed pipe between train pipe and tender cylinder. Engine No. 55.	
Colne Valley and Halstead.	—	No failures reported.	—	Westinghouse Automatic Brake. 33,450 miles.
Corris - - -	—	No failures reported.	—	Vacuum Automatic. 6,700 miles.
East and West Junction.	—	No failures reported.	—	Westinghouse Automatic Brake. 60,217 miles.
Festiniog - - -	—	No failures reported.	—	Automatic Vacuum. 20,810 miles.
Furness - -	—	No failures reported.	—	Automatic Vacuum. 331,063 miles.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Golden Valley - -	—	No failures reported.	—	Automatic Vacuum. 13,768 miles.
Great Eastern - -	Westinghouse Brake. (554 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	5,654,640 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 6	Collar broke off pipe from main reservoir to driver's valve on engine No. 417, at Fanton Junction.	
		,, 8	Collar broke off pipe from pump to main reservoir on engine No. 140, at Chesterton Junction.	
		,, 11	Flexible pipe burst on composite carriage No. 396, near Claydon.	
		,, 13	Union nut slacked back on main pipe of engine No. 12, between Lynn and March.	
		,, 16	Collar broke off pipe from pump to main reservoir on engine No. 1,019, near Harold Wood.	
		17	Collar broke off pipe from main reservoir to driver's valve on engine No. 787, near Waterbeach.	
		,, 19	Collar broke off pipe from pump to main reservoir on engine No. 788, near Ponder's End.	
		,, 23	Flexible pipe burst on brake-van No. 4, at Margaretting.	
		Feb. 1	Collar broke off pipe from pump to main reservoir on engine No. 0,708, near South Tottenham.	
		,, 3	Flexible pipe burst on composite carriage No. 438, near Bury.	
		,, 5	Collar broke off pipe from main reservoir to driver's valve on engine No. 423, at Tottenham.	
		,, 10	Collar broke off pipe from main reservoir to driver's valve on engine No. 703, near Nocton.	
		,, 19	Collar broke off pipe from pump to main reservoir on engine No. 69, at Coborn Road.	
		,, 19	Collar broke off pipe from main reservoir to driver's valve on engine No. 763, near Ely.	
		,, 24	Collar broke off pipe from pump to main reservoir on engine No. 1,019, at Wymondham.	
		,, 26	Union nut slacked back on pipe from main reservoir to driver's valve on engine No. 701, near Haxey.	
		,, 28	Collar broke off pipe from pump to main reservoir on engine No. 1,017, at Stowmarket.	
		,, 28	Collar broke off pipe from main reservoir to driver's valve on engine No. 765, near Manningtree.	
		Mar. 10	Collar broke off pipe from main reservoir to driver's valve on engine No. 423, at Billericay.	
		,, 12	Collar broke off pipe from pump to main reservoir on engine No. 341, at Bethnal Green.	
		,, 24	Collar broke off pipe from pump to main reservoir on engine No. 771, at Ely.	
		,, 30	Flexible pipe burst on T.C.C. No. 352, at Lincoln.	
		,, 31	Collar broke off pipe from pump to main reservoir on engine No. 794, at Stepney.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Great Eastern—*cont.* -	Westinghouse Brake—*cont.*	Mar. 31	Flexible pipe burst on composite carriage No. 104, at Ely.	
		April 1	Collar broke off pipe from pump to main reservoir on engine No. 730, near Marks Tey.	
		„ 2	Flexible pipe burst on cattle-box No. 4, near Ipswich.	
		„ 7	Collar broke off pipe from main reservoir to driver's valve on engine No. 417, near Shenfield.	
		„ 8	Collar broke off pipe from driver's valve to three-way piece on engine No. 756, at Romford.	
		„ 10	Flexible pipe burst on carriage truck No. 105, near Histon.	
		„ 28	Flexible pipe burst on composite carriage No. 321, near York.	
		May 5	Flexible pipe burst on composite carriage No. 108, near Elsenham.	
		„ 7	Collar broke off pipe from pump to main reservoir on engine No. 569, near Kelvedon.	
		„ 8	Collar broke off pipe from pump to main reservoir on engine No. 475, at Halifax Junction.	
		„ 12	Flexible pipe burst on composite carriage No. 166, near Attleboro'.	
		„ 18	Flexible pipe burst on brake-van No. 247, at Canning Town.	
		June 1	Flexible pipe burst on T.C.C. No. 616, near Fulbourne.	
		„ 8	Collar broke off pipe from pump to main reservoir on engine No. 747, near Witham.	
		„ 9	Collar broke off pipe from driver's valve to main reservoir on engine No. 784, at Harlow.	
		„ 20	Collar broke off pipe from driver's valve to main pipe on engine No. 757, near Kelvedon.	
		„ 25	Flexible pipe burst on brake-van No. 482, near Whittlesford.	
		„ 27	Flexible pipe burst on T.C.C. No. 835, near Bentley.	
		„ 28	Flexible pipe burst on composiie carriage No. 159, near Needham.	
	Vacuum -	„ 28	Brakes on train between Stanstead and Elsenham, caused by mismanagement of the driver.	10,304 miles.
			Brake Failures on "Foreign Stock" working over the G.E.R. Co.'s System.	
	Westinghouse Brake.	Mar. 14	Flexible pipe burst on Midland Railway horse-box No. 349, at March.	
		„ 27	Flexible pipe became detached at clip and dropped on North-Eastern Railway horse-box No. 320, near Misterton.	
		„ 29	Flexible pipe burst on Midland Railway horse-box No. 332, near Manea.	
		May 14	Flexible pipe burst on Great Northern Railway horse-box No. 2,525, at Blankney.	
		„ 22	Flexible pipe burst on Great Northern Railway horse-box No. 1,178, near Sykes Junction.	
		„ 28	Flexible pipe burst on Midland Railway horse-box No. 340, at Peterboro'.	
		June 29	Flexible pipe burst on North-Eastern Railway horse-box No. 224, at Stretham Fen.	
		„ 27	Flexible pipe burst on Great Northern Railway horse-box No. 2,519, near Cowbit.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Great Northern -	The Vacuum Automatic. (756 engines fitted. *See* Return No.1.)		1. Nil.	4,722,927 miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		June 1	Three minutes delay at Peakirk to down train No. 55, owing to piece of waste being found in train pipe of luggage brake-van No. 2390. Overran station.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 4	Three minutes delay at Grantham to down branch train No. 14, owing to connecting pipes of third-class brake No. 2330 and composite No. 226 leaking.	
		" 4	Two minutes delay at Peterborough to up train No. 264, owing to ice and snow being between connecting pipes of train.	
		" 5	Nine minutes delay at Finsbury Park to up train No. 111, owing to india-rubber washers on second-class No. 519 and first-class No. 2143 freezing to castings of connecting pipes.	
		" 6	Seven minutes delay at Luton Hoo to up train No. 12 owing to ice being wedged against piston rod of engine No. 116 causing a leakage.	
		" 6	Five minutes delay at Doncaster to up train No. 21, owing to valves under carriages of train freezing.	
		" 8	Two minutes delay between Doncaster and Grantham to up train No. 391, owing to piston glands of van No. 1715 and composite No. 421 being defective.	
		" 8	Two minutes delay at Moorgate Street to down train No. 258, owing to connecting pipe of engine No. 770, freezing on stud.	
		" 10	Nine minutes delay at New Southgate to up train No. 690, owing to drip-valve of engine No. 89 freezing.	
		" 23	Fifteen minutes delay at Holme to up train No. 264, owing to release valve of composite No. 2680 being full of dirt.	
		" 26	Ten minutes delay at Grimsby to up train No. 22, owing to iron main pipe of fish waggon No. 15,427 being defective.	
		Feb. 2	Nine minutes delay at Sleaford to down train No. 7, owing to rolling ring of L.B. van No. 1728 having worn slack.	
		" 9	Five minutes delay at Bradford to 6.55 p.m. Bradford train, owing to connecting pipe on fruit van No. 8871 being out of order.	
		" 10	Seven minutes delay at Grantham to up train No. 475, owing to connecting pipe of horse box No. 1188 being defective.	
		" 12	Four minutes delay at Barnet to up train No. 111, owing to cap working off drip-valve of engine No. 932.	
		" 19	Twenty minutes delay at Shipley to train No. 65/5, owing to piece of waste being in connecting pipe of engine No. 660.	
		" 21	Six minutes delay at Boston to up train No. 12, owing to flexible pipe of fish truck No. 8523 being defective.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Great Northern—*cont.*	The Vacuum Automatic—*cont.*	Feb. 25	Eight minutes delay at Stanley to train No. 34/2, owing to hose connection between engine No. 887 and tender giving way.	
		Mar. 12	Eleven minutes delay at Kirkstead to down train No. 27, owing to piston rod of composite No. 1934 dropping out of cylinder.	
		,, 13	Two minutes delay at Holloway to down train No. 554, owing to diaphragm of third-class carriages Nos. 750 and 590 being defective.	
		,, 27	Four minutes delay at Cotham to up train No. 121, owing to cylinder casting of engine No. 465 breaking. Struck by something on the line.	
		,, 27	Eleven minutes delay between Crowle and Elsham, to excursion train No. 389, owing to main train pipe of carriage brake No. 2662, being defective.	
		Apr. 2	Five minutes delay between Retford to Grantham to up train No. 728, owing to valve of engine No. 286 sticking.	
		,, 17	Twelve minutes delay at Sandy to down train No. 535, owing to piston ring of bogie carriage No. 873 being defective.	
		,, 18	Seven minutes delay between Sudbury and Egginton to up train No. 197, owing to piston rod of composite No. 302 dropping out of cylinder.	
		May 1	Six minutes delay at East Ville to up E.L. train No. 7, owing to pipe of cattle truck No. 25,081 being defective.	
		,, 9	Five minutes delay at Mablethorpe to up train No. 9, owing to piston rod of third-class carriage No. 1633 bending.	
		,, 16	Six minutes delay at Radcliffe to down train No. 37, owing to piston rod of composite No. 122 being partly disconnected.	
		,, 19	Twenty-seven minutes delay at Boston to up train No. 29, owing to connecting pipe washer of composite No. 456 being defective.	
		,, 30	Two minutes delay between Loseby and King's Cliffe to train No. 87/101, owing to connecting pipe of van No. 1409 being defective, and piston rod of composite No. 75 becoming detached.	
		June 20	Seven minutes delay at Gainsboro' to up train No. 62/114, owing to connecting pipe of tender No. 951 being damaged by a porter.	
		,, 29	Five minutes delay at Peterborough to up train No. 264, owing to connecting pipe on milk van No. 1769 being defective.	
Great Western - -	Automatic Vacuum Brake (Sanders & Bolitho's) (643 engines fitted. *See* Return No. 1.)		1. and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	9,397,543 miles passenger trains 101,501 miles mixed trains.
		Jan. 16	Five minutes delay running between Acton and Reading, owing to gland studs of milk truck No. 422 breaking.	
		,, 16	Seven minutes delay at Westbourne Park, owing to piston of automatic ejector of engine No. 985 sticking.	
		,, 18	Three minutes delay at Bristol, owing to union nut of branch pipe of third-class carriage No. 1274 working off.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Great Western—*cont.*	Automatic Vacuum Brake (Sanders and Bolitho's) —*cont.*	Jan. 18	Seven minutes delay at Yeovil, owing to leakage at top connection of copper pipe of passenger brake-van No. 375. Delay putting van off.	
		„ 19	Three minutes delay running between Wolverhampton and Worcester, owing to cylinder top cover of passenger brake-van No. 400 breaking; and ten minutes delay at Worcester testing brake and inserting blank washer.	
		„ 19	Eleven minutes delay running between Paddington and Didcot, owing to branch copper pipe of milk-van No. 528 breaking.	
		„ 24	Three minutes delay at Yeovil, owing to gland studs of third-class carriage No. 702 being loose.	
		„ 27	Five minutes delay running between Bramley and Basingstoke, owing to pieces of cotton waste found on engine No. 421 under air valves of pump.	
		„ 27	Five minutes delay running between Banbury and Reading, owing to continuous pipe of carriage truck No. 277 splitting.	
		„ 29	Three minutes delay at Didcot, owing to flexible hose-pipe of carriage truck No. 273 breaking.	
		Feb. 1	Five minutes delay at Yeovil, owing to cylinder of third-class carriage No. 741 being jammed on piston, owing to rod being rough and dirty. Delay putting coach off.	
		„ 3	Five minutes delay running between St. Thomas and Dawlish, owing to joint of stuffing box of carriage truck No. 352 leaking.	
		„ 6	Five minutes delay at Bristol, owing to union nut of air pipe of engine No. 843 working off.	
		„ 19	Eight minutes delay at Acton, owing to pump of engine No. 3515 breaking.	
		„ 23	Eight minutes delay at Aldersgate Street, owing to piston of automatic ejector of engine No. 983 sticking.	
		„ 26	Five minutes delay at Hereford, owing to flexible hose-pipe of engine No. 3234 breaking. Delay putting on new pipe.	
		„ 28	Twelve minutes delay running between Paddington and Slough, owing to ejector check valve of engine No. 2312 sticking up.	
		March 3	Five minutes delay at Carmarthen Junction, owing to cylinder cover of poultry van No. 329 breaking.	
		„ 6	Eight minutes delay at Yeovil, owing to cylinder cover joint of fruit van No. 47,876 leaking.	
		„ 7	Slight delay at Aldgate, owing to spindle of steam valve of engine No. 1406 breaking.	
		„ 13	Six minutes delay running between Exeter and Plymouth, owing to valve on swan neck of continuous pipe of third-class carriage No. 1597 leaking.	
		„ 14	Fifteen minutes delay at West Drayton, owing to air pipe leading to pump of engine No. 476 breaking.	
		„ 20	Two minutes delay at Tilehurst, and four minutes delay at Didcot, owing to union nuts of branch pipes of horse boxes Nos. 689 and 699 working loose. Delay at Didcot tightening nuts.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3 Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Great Western—*cnt.*	Automatic Vacuum Brake (Sanders and Bolitho's) —*cont.*	March 23	Eight minutes delay at Filton, owing to gland of pump of engine No. 683 blowing out.	
		„ 28	Four minutes delay between Neath and Briton Ferry. When reducing speed, brake applied suddenly and stopped train. Piece of waste found under ejector check valve of engine No. 3216.	
		„ 29	Sixteen minutes delay at Hay Mill, owing to bridge pipe of pump of engine No. 159 breaking.	
		April 3	Five minutes delay at Cullompton, owing to cylinder cover of carriage truck No. 212 breaking.	
		„ 5	Three minutes delay at Banbury, owing to piece of waste under ejector check valve of engine No. 584.	
		„ 17	Seven minutes delay at Birkenhead (Town Station), owing to continuous pipe of engine No. 774 being defective.	
		„ 20	Five minutes delay at Leamington, owing to communication valve of third-class carriage No. 2828 being defective.	
		„ 21	Five minutes delay running between Shrivenham and Paddington, owing to air pipe of engine No. 3236 breaking.	
		„ 25	Four minutes delay at Slough, and four minutes delay at Taplow. Ejector of engine No. 3519, would not close owing to a wood screw having by some means got under it.	
		„ 29	Fourteen minutes delay at Farringdon Street, owing to release valve of third-class carriage No. 2725 sticking up.	
		May 10	Five minutes delay at Challow, owing to piece of cotton waste under ejector check valve of engine No. 3224.	
		„ 12	Three minutes delay at Shepherd's Bush, owing to collar of branch pipe of second-class carriage No. 70 breaking off.	
		„ 15	Three minutes delay at Llantrissant, owing to back cover of pump of engine No. 3220 breaking.	
		„ 16	Eight minutes delay at Sapperton, owing to back cover of pump of engine No. 3220 breaking.	
		„ 18	Ten minutes delay at Cardiff, owing to piece of waste under ejector check valve of engine 1458.	
		„ 18	Three minutes delay at Kemble, owing to ejector of engine No. 3220 being defective.	
		„ 22	Five minutes delay at Portbury, owing to ejector of engine No. 1495 being defective.	
		„ 28	Five minutes delay at Birmingham. Piston binding on cylinder, owing to dirt getting between gland and piston rod of third-class carriage No. 1892. Delay putting coach off.	
		„ 29	Four minutes delay running between Cardiff and Bridgend, owing to ejector of engine No. 3220 being defective.	
		June 2	Thirteen minutes delay running between Paddington and Reading, owing to continuous air pipe of tender of engine No. 1122 being defective.	
		„ 7	Seven minutes delay at Wheatsheaf Junction, owing to pump rod of engine No. 759 breaking.	

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Great Western—*cont.*	Automatic Vacuum Brake (Sanders and Bolitho's) —*cont.*	June 9	Ten minutes delay between Aldgate and Mansion House, owing to spindle of automatic steam brake valve of engine No. 977 breaking.	
		„ 14	Five minutes delay at Yeovil, owing to joint of air pipe of engine No. 485 breaking.	
		„ 12	Eight minutes delay at Reading, owing to bridge pipe of pump of engine No. 55 breaking when running between Slough and Reading. Delay at Reading changing engines.	
		„ 15	Five minutes delay at Oxford, owing to cylinder cover of milk truck No. 539 leaking.	
		„ 18	Nine minutes delay running between Slough and Paddington, owing to ejector check valve of engine No. 3514 breaking.	
		„ 19	Three minutes delay at Carmarthen Junction, owing to leakage at union nut of copper pipe of fish truck No. 42,573.	
		„ 23	Fifteen minutes delay running between Paddington and Swindon, owing to bridge pipe of pump and air pipe under tender of engine No. 477 breaking.	
Hull, Barnsley, and West Riding Junction Railway and Dock Company.	- - -	No failures reported.	—	Automatic Vacuum Brake. 174,041 miles.
Isle of Wight - -	- - -	No failures reported.	—	Westinghouse Automatic Brake. 60,726 miles.
Isle of Wight Central -	—	No failures reported.	—	Westinghouse Brake. 77,345 miles.
Lancashire and Yorkshire.	Automatic Vacuum Brake (896 engines fitted. *See* Return No. 1)		1 and 2. Nil.	4,752,790 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 1	The 7.0 p.m. Manchester to Fleetwood lost 4 minutes between Manchester and Bolton owing to the rolling ring being twisted in the tender brake cylinder of engine No. 869.	
		„ 2	The 5.0 p.m. Blackburn to Pimbo Lane was delayed 48 minutes at Chorley owing to the main vacuum pipe on engine No. 38 being broken.	
		„ 3	The 6.15 p.m. Preston to Todmorden had 15 minutes late start owing to defective rolling ring on engine No. 664.	
		„ 4	The 6.17 p.m. Manchester to Southport was delayed 6 minutes at St. Luke's Road owing to the vacuum piston sticking on engine No. 983, owing to frost.	
		„ 5	The 9.50 a.m. Manchester to Blackpool T.R. was delayed 9 minutes at Lea Road owing to the rolling ring being twisted and causing piston to stick on engine No. 864.	

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Lancashire and Yorkshire—*cont.*	Automatic Vacuum Brake —*cont.*	Jan. 5	The 5.52 p.m. Liverpool to Preston was delayed 20 minutes at Ribble Bridge, Preston, by the vacuum piston sticking on engine No. 664, owing to frost.	
		„ 6	The 1.15 p.m. Salford to Colne was delayed 12 minutes at Accrington by the vacuum piston of engine No. 876 sticking, owing to frost.	
		„ 6	The 4.45 a.m. Manchester to Hellifield was delayed 13 minutes at Farnworth by the vacuum pistons of engine and tender sticking on engine No. 1004, owing to frost.	
		„ 6	The 1.20 p.m. Blackpool to Manchester was delayed 3 minutes at Bolton owing to the tender brake of engine No. 1001 freezing on.	
		„ 6	The 6.25 a.m. Rochdale to Liverpool was delayed between Bolton and Wigan owing to the gauge-pipe of van No. 270 breaking through ordinary wear and tear.	
		„ 7	The 5.5 p.m. Manchester to Atherton was delayed 8 minutes at Walkden by the vacuum piston sticking on engine No. 876, owing to frost.	
		„ 8	The 6.57 a.m. Liverpool to Rochdale was delayed 3 minutes at Westhoughton by the tender vacuum piston sticking on engine No. 732, owing to frost.	
		„ 8	The 10.5 a.m. Middleton Junction to Mumps was delayed 8 minutes at Oldham by the vacuum piston sticking on engine No. 601, owing to frost.	
		„ 11	The 5.58 p.m. Goole to Wakefield was delayed 26 minutes at Whitley Bridge by the engine vacuum piston sticking on engine No. 48, owing to frost.	
		„ 20	No. 2 special, Sheffield to Preston, lost 3 minutes during running from Sowerby Bridge to Stansfield Hall, owing to valve of the vacuum pump on engine No. 101 breaking.	
		„ 31	The 8.30 a.m. Bradford to Methley Junc- was delayed 10 minutes at Low Moor, the rolling ring having failed through wear and tear. Engine No. 1079.	
		Feb. 2	The 5.40 p.m. Manchester to Birkdale lost 2 minutes in running, through the clappit valve of the ejector an engine No. 980 being defective.	
		„ 21	The 7.50 p.m. Manchester to Rochdale was delayed 8 minutes at Failsworth owing to the vacuum pistcn of engine No. 282 sticking, caused by frost.	
		March 12	The 6.28 p.m. Preston to Manchester was delayed through a leakage under third-class carriage No. 595, the india-rubber washer having worn.	
		„ 24	The 5.30 p.m. Liverpool to Leeds was delayed 6 minutes at Swinton owing to the train pipe breaking at the combination ejector. Engine No. 1006.	
		April 12	The 8.25 p.m. Meltham to Bradford lost 14 minutes between Lockwood and Mirfield through the india-rubber washer being lost, leading plug of engine No. 94.	
		„ 18	The 8.5 p.m. Penistone to Bradford was delayed 6 minutes at Bradford through the large nut inside the ejector working loose, causing engine No. 1170 to be unable to form the requisite amount of vacuum.	

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Lancashire and Yorkshire—*cont.*	Automatic Vacuum Brake —*cont.*	May 3	The 5.38 p.m. Liverpool to Southport was delayed at Freshfield owing to the piston of third-class carriage No. 1662 sticking, through the ring having been twisted out of its place from some cause unknown.	
		„ 12	The 3.5 p.m. Normanton to Bradford was delayed 12 minutes at Ravensthorpe through the small pipe to vacuum piston being broken. Engine No. 421.	
		„ 20	The 5.35 p.m. Manchester to Colne was delayed 14 minutes at Bury. The combination ejector valve of engine No. 667 was out of order.	
		„ 23	No. 5 special, Blackpool (Central) to Manchester, lost 6 minutes during running through the piston packing being defective. Engine No. 924.	
		June 9	The 11.50 a.m. Blackpool T.R. to Manchester lost 3 minutes during the journey through defective roller ring. Engine No. 865.	
		„ 23	The 2 p.m. Fleetwood to Manchester lost 5 minutes during running between Preston and Lostock Junction owing to vacuum piston sticking through water being in the vacuum pan. Engine No. 867.	
		„ 23	The 2.10 p.m. Colne to Manchester was delayed 3 minutes at Accrington through the india-rubber pipe between the engine and tender collapsing. Engine No. 994.	
Liskeard and Caradon	—	No failures reported.	——	Walter Parker Smith's Automatic Brake. 4,612 miles.
London and North-Western.	Automatic Vacuum Brake. (1,414 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	9,504,950 miles passenger trains. 45,262 miles mixed trains.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 5	The 4.25 p.m. train from Bletchley to Banbury lost time in running between Newton Longville and Swanbourne, the engine having a difficulty in maintaining the necessary vacuum, owing to a small piece of packing having got into the ejector.	
		„ 9	The 4.25 p.m. train from Manchester to Leeds was delayed at Stalybridge, Huddersfield, and at Ravensthorpe, owing to a difficulty in working the brakes. Due to the balance valve on the engine being out of adjustment.	
		„ 10	The 10 a.m. train from London to Carlisle was stopped out of course at Hadesmore Crossing, near Lichfield, the engine being unable to work the brakes owing to the vacuum pipe on the engine having broken. Failure of material.	
		„ 29	The 8.30 a.m. train from Manchester to London lost time in running to Stockport, owing to the engine being unable to maintain the necessary vacuum. Probably caused by some obstruction having got under one of the engine clacks.	
		Feb. 10	The 11.5 a.m. train from Earlstown to Wigan lost time in running. The engine was unable to maintain the necessary vacuum owing to a small piece of packing having got into the torpedo dart.	

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London and North-Western—*cont.*	Automatic Vacuum Brake —*cont.*	Feb.	The 12.15 p.m. train from London to Stafford lost time in running from Rugby, owing to the necessary vacuum not being maintained. Due to a leakage at the miniature sack under Caledonian Railway horse-box No. 71. Failure of material.	
		10	The 10.10 p.m. train from Wigan to Liverpool lost time in running to Thatto Heath, owing to the necessary vacuum not being maintained. Due to a leakage at the stuffing-box under West Coast carriage No. 55 and third-class carriage No. 955 consequent on a defective packing ring. Failure of material.	
		„ 22	The 9.0 a.m. train from London to Crewe was delayed at Nuneaton, owing to a difficulty in creating the vacuum. Due to some packing having got into the torpedo on the engine.	
		„ 24	The 7.42 a.m. train Market Harboro' to Blisworth; 9.5 a.m. train Blisworth to Nottingham; 4.5 p.m. train Northampton to Blisworth; 4.40 p.m. train Blisworth to Northampton. These trains, which were worked by the same engine, were delayed at various places *en route*, owing to a difficulty in maintaining the vacuum. Due to the ejector valve on the engine sticking up. Failure of material.	
		April 5	The 10.35 a.m. train from Liverpool to Wigan was delayed at Brynn. The engine was unable to release the brakes owing to a small screw having got into the vacuum pipe.	
		„ 11	The 11.45 a.m. train from Chester to Holyhead was stopped out of course at Penmaenbach tunnel, owing to the engine being unable to maintain the necessary vacuum. Due to the first connection of the vacuum pipe on the engine breaking on the right-hand side. Failure of material.	
		„ 22	The 9.30 p.m. train from Manchester to Liverpool was stopped out of course at Collins Green, owing to the engine being unable to maintain the necessary vacuum. Due to the iron pipe leading from the ejector to the front end of the engine breaking off. Failure of material.	
		May 9	The 1.10 a.m. train from Crewe to London was delayed at Stafford owing to a difficulty in creating the necessary vacuum. Due to a leakage at the piston rod of Great Western Railway fish-truck No. 985 consequent on a cylinder cover having broken. Failure of material.	
		„ 15	The 3.10 a.m. train from Crewe to London was delayed at Stafford and Rugby and lost time in running owing to a difficulty in maintaining the vacuum. Due to a stud in the joint of the splasher on the engine having broken. Failure of material.	

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London and South-Western.	Vacuum Automatic Brake. (609 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	4,976,035½ miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 3	Thirteen minutes delay at Guildford. Brake block hanger plate of No. 424 van broken.	
		,, 4	Six minutes delay at Woking. Brake blocks frozen on all the train.	
		,, 5	Seven minutes delay at Wimbledon. Brake blocks frozen on wheels of No. 8 third-class brake-van.	
		,, 5	Seven minutes delay at Wimbledon. Brake blocks frozen on two carriages.	
		,, 5	Four minutes delay at Sunningdale. Brake blocks of carriages frozen to wheels.	
		,, 5	Twenty minutes delay in starting at Bournemouth East. Pipes between engine and tender frozen.	
		,, 6	Three minutes delay at Wokingham. Flexible pipes between carriages Nos. 51 and 856 partly disconnected.	
		,, 7	Three minutes delay in starting at Friary. Brake blocks of carriages frozen to wheels.	
		,, 8	Two minutes delay on journey from Kingston to Waterloo. Vacuum pipe connections between carriages Nos. 27 and 255 opening.	
		,, 8	Five minutes delay at Kew Gardens. Miniature sack under third-class brake-van No. 512 frozen.	
		,, 9	Three minutes delay at Broadstone Junction. Brake of No. 23 block train frozen.	
		,, 17	Four minutes delay at Yeovil Junction. Valve in No. 248 van out of order.	
		Feb. 4	Five minutes delay at Yeovil Junction. Cylinder branch pipe of passenger's luggage-van No. 50 broken off.	
		,, 27	Two minutes delay at Salisbury. Brake on third-class carriage No. 929 adjusted too tightly.	
		Mar. 7	Two minutes delay at Dorchester. Main train pipe on meat van No. 2945 leaky.	
		,, 14	Two minutes delay at Chard Junction. Vacuum gauge pipe of engine broken. Wear and tear.	
		,, 21	Four minutes delay between Fareham and Porchester. Drip valve chamber of engine worked out. Wear and tear.	
		,, 21	Three minutes delay at Waterloo. Vacuum pipe washers defective on milk-van No. 211 and brake-van No. 363.	
		,, 28	Two minutes delay at Waterloo. Train brake requiring adjusting.	
		Apr. 4	Twenty-eight minutes delay on journey from Southampton to Waterloo. Defective joint in vacuum ejector of engine.	
		,, 8	Two minutes delay at Woking. Bolt missing from brake-rod safety-hanger on third-class carriage No. 156.	
		,, 16	Three minutes delay at Wimbledon. Vacuum ejector of engine out of order. Wear and tear.	
		,, 18	Thirteen minutes delay at Lympstone. Cylinder-ring of third-class carriage No. 43 becoming fixed.	

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London and South-Western—*cont.*	Vacuum Automatic Brake —*cont.*	Apr. 21	Four minutes delay in starting at Waterloo. Vacuum ejector of engine out of order. Wear and tear.	
		„ 25	Seven minutes delay in starting at Exeter. Pipe leading from steam brake valve to main pipe broken. Wear and tear.	
		May 5	Three minutes delay at Salisbury. Brake hanger bolt of third-class carriage No. 1000 missing.	
		June 23	Twenty minutes delay at Clapham Junction. Flexible pipe of carriage-truck No. 94 defective.	
	Westinghouse	No failures reported.	——	685¼ miles.
London, Brighton, and South Coast.	Westinghouse Continuous Automatic Air Brake. (386 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	3,653,027 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 3	9.10 a.m. South Croydon to London Bridge delayed 4 minutes at Penge. Brake on No. 1073 third-class brake owing to frost.	
		„ 5	7.21 p.m. London Bridge to Brighton delayed 3 minutes outside East Croydon. Brake on No. 135 brake-van owing to frost.	
		„ 6	4.20 p.m. New Cross to Shoreditch delayed 3 minutes. Brake on, apparently through frost.	
		„ 7	10.45 a.m. Hayward's Heath to Brighton delayed 1 minute between Burgess Hill and Hassocks. Coupling hose on No. 50 brake-van burst.	
		„ 8	5.34 p.m. London to London delayed 2 minutes between Streatham Hill and London Bridge. Brake on apparently through frost being in the pipes.	
		„ 18	10.50 p.m. Brighton to London delayed 2 minutes outside Red Hill. Coupling hose between engine and tender burst.	
		Feb. 16	7.33 a.m. London Bridge to Brighton delayed 3 minutes at A.B. signal-box, London Bridge. Coupling hose between engine and tender burst.	
		„ 18	7.15 p.m. Brighton to London Bridge delayed 5 minutes between Brighton and Folly Hill apparently owing to triple valve leaking at well joint.	
		„ 22	5.35 p.m. West Worthing to Brighton delayed 2 minutes at Lancing. Brake on No. 429 third-class carriage, apparently through half-cock leaking.	
		Mar. 5	6.5 p.m. Brighton to Victoria delayed 4 minutes between Earlswood and Red Hill. Coupling hose on No. 561 London and North-Western Company's horse-box burst.	
		„ 5	6.31 p.m. London Bridge to South Croydon delayed 2 minutes at Crystal Palace. Coupling hose on No. 144 third-lass carriage burst.	
		„ 6	10.22 a.m. Hastings to Victoria delayed 6 minutes between Polegate and Berwick. Main air copper pipe leading from donkey-pump to main reservoir broke.	

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London, Brighton, and South Coast—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	Mar. 26	8.36 a.m. London Bridge to Brighton special delayed 2 minutes at Preston Park. Brake blocks on No. 130 second-class carriage hot through the brake rubbing, apparently owing to the slide-valve of triple being worn.	
		Apr. 11	2.9 p.m. London Bridge to Victoria delayed 4 minutes between Sydenham and Crystal Palace bank signals. Engine coupling head clamp bolt broken.	
		„ 23	3 p.m. Kensington to Brighton special delayed 5 minutes at Kensington. Coupling hose of a covered carriage-truck burst.	
		„ 25	6.54 a.m. Victoria to West Croydon delayed 4 minutes at Victoria. Donkey-pump main valve stop broken (delay changing engines).	
		„ 27	9.12 Epsom Downs to Sutton delayed 3 minutes between Epsom Downs and Banstead. Engine coupling head packing ring split.	
		May 3	5.35 a.m. Victoria to London Bridge delayed 3 minutes at Victoria. Engine triple valve joint defective.	
		„ 4	5.10 p.m. Brighton to East Grinstead delayed 2 minutes at Horsted Keynes. Coupling head packing ring on engine defective.	
		June 5	6.13 p.m. Lewes to Brighton delayed 5 minutes between Falmer and London Road. Coupling head packing ring on No. 38 brake-van split.	
		„ 5	12.21 midnight London to Epsom delayed 5 minutes between Waddon and Wallington. Coupling hose on engine burst.	
		„ 8	1.50 p.m. Brighton to Hastings delayed 2 minutes at St. Leonard's. Main air copper pipe between donkey-pump and main reservoir broke at brazed union collar.	
		„ 8	7.31 p.m. London to Dorking delayed 2 minutes at Streatham Hill. Main air copper pipe between donkey-pump and main reservoir broke at brazed union collar adjoining donkey-pump.	
		„ 14	5.44 p.m. London to Sutton delayed 2 minutes at Norwood Junction. Slide valve of triple worn.	
		„ 14	7.55 p.m. Victoria to South Croydon delayed 2 minutes at Crystal Palace. Donkey-pump reversing piston rod broken.	
		„ 16	1.5 p.m. Victoria to Brighton delayed 5 minutes between Clapham Junction and Wandsworth Common. Coupling hose on No. 48 Midland Railway Company's horse-box burst.	
		„ 20	2.3 p.m. Victoria to Brighton delayed 4 minutes between Earlswood and Horley. Engine main air pipe leading from donkey-pump broke at union.	
		„ 25	7.51 a.m. special Whitechapel to Littlehampton delayed 4 minutes at New Cross. Coupling hose on No. 428 third-class carriage leaked.	
		No failures reported.	—	Automatic Vacuum brake. 1,934 miles.

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London, Chatham, and Dover.	Westinghouse Continuous Automatic Air Brake. (196 engines fitted. *See* Return No. 1.)		1. Nil.	1,796,759 miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		Feb. 26	6.45 p.m. Hendon to Victoria, overshot platform at Welsh Harp four coach lengths, through cocks not being opened between engine and train at Hendon, fault of company's servants.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brake.*	
		Jan 6	7.13 a.m. Victoria to Greenwich. Ten minutes at Wandsworth Road, leather washer missing out of union nut joint of coupling hose. No. 135 second class. Fault of examiner.	
		,, 7	4.0 p.m. Sheerness to Victoria. Nineteen minutes changing engine at Dockyard Station, piston rings broken in main valve of pump.	
		,, 12	6.45 a.m. Dover to Victoria. Five minutes at Chatham changing engine, reversing piston ring of pump broke.	
		,, 15	9.0 a.m. Chatham to Dover. Five minutes at Canterbury, hose pipe came off nozzle between engine and tender—material perished.	
		,, 19	9.10 a.m. Deal to Kearsney. Four minutes at Kearsney, collar came off pressure gauge pipe leading from main reservoir to gauge.	
		,, 22	5.50 a.m. Bickley to Victoria. Nine minutes through brass elbow of steam pipe connection to pump breaking.	
		,, 28	8.25 p.m. Faversham to Victoria. Three minutes at Sittingbourne, defective coupling hose washer on No. 47 brake van.	
		,, 30	6.15 a.m. Queenboro' to Victoria. Three minutes at Chatham, coupling hose burst on No. 64 second class.	
		Feb. 14	10.0 a.m. Dover to Victoria. Five minutes at Park Lane, near Farningham, coupling hose burst on No. 139 first class.	
		,, 14	5.57 p.m. Victoria to Faversham. Two minutes at Grosvenor Road, through end cock of train pipe leaking. No. 70 third class.	
		,, 24	4.5 p.m. Moorgate Street to Victoria. Six minutes at Snow Hill, union nut of hose coupling slacked back. No. 169 first class.	
		March 1	12.5 p.m. Victoria to Faversham. Five minutes at Rainham, triple valve bolts slacked back. No. 94 third class.	
		,, 13	10.0 a.m. Victoria to Dover Eight minutes at Sydenham Hill and Beckenham, slide of triple valve badly cut through some grit getting in. No. 90 second class.	
		,, 15	8.0 a.m. Victoria to Dover. Three minutes through elbow coming off on pipe leading from pump to main reservoir.	

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London, Chatham, and Dover—*cont.*	Westinghouse Continuous Automatic Air Brake—*cont.*	March 21	10.25 a.m. Hendon to Victoria. Two minutes at Farringdon Street, coupling hose burst on Midland Company's horse box No. 338.	
		April 6	7.20 p.m. Victoria to New Brompton. Four minutes late in starting, air pipe joint of pump leading to main reservoir blew out.	
		„ 10	8.40 p.m Faversham to Victoria. Nine minutes late in starting, coupling hose burst on No. 223 first class.	
		„ 13	3.15 p.m. Faversham to Dover. Seven minutes at Shepherds Well, defective hose pipe washers. No. 86 brake van and No. 713 luggage van.	
		„ 18	2.55 p.m. Gravesend to Victoria. Seven minutes through coupling hose between engine and tender coming off nozzle—material perished.	
		„ 18	7.10 p.m. Herne Hill to Holborn. Three minutes at Walworth Road, through main cock on engine breaking.	
		„ 21	5.56 p.m. Moorgate Street to Victoria. Three minutes late in starting, main valve of brake valve seized.	
		May 4	2.5 p.m. Chatham to Victoria. Seven minutes late in starting—defective hose pipe washers No. 9 L. & S.W.R. carriage truck.	
		„ 4	5.32 p.m. Victoria to Sevenoaks. Five minutes at Kent House, through collar breaking off copper pipe leading from brake valve to air gauge.	
		„ 14	10.45 p.m. Special Victoria to Dover. Five minutes at Penge, back nut of branch pipe leaking on No. 151 third class.	
		„ 22	10.56 p.m. Moorgate Street to Victoria. Four minutes in Victoria Yard, piston set screws slacked back on No. 216 first class.	
		„ 25	9.48 p.m. Victoria to Moorgate Street. Three minutes late in starting, escape valve spring of driver's brake valve broken.	
		June 2	9.0 a.m. Crystal Palace to St. Paul's. Two minutes late in starting, reversing piston rings of pump broken.	
		„ 4	7.0 p.m. Victoria to Dover. Six minutes between Herne Hill and Chatham, coupling hose burst of No. 27 composite.	
		„ 6	3.25 p.m. Victoria to Ramsgate. Eleven minutes at Herne Hill, detaching No. 24 first class, hose pipe coupling case defective.	
		„ 27	5.0. p.m. Faversham to Victoria. Ten minutes at Rainham, coupling hose burst on Midland Company's fruit van No. 396.	
	Automatic Vacuum Air Brake. (11 engines fitted. *See* Return No. 1.		— —	1,794 miles.
Londonderry - - (Seaham and Sunderland.)	- - - -	No failures reported.	—	Westinghouse Automatic Brake. 20,388 miles.

1. Name of Railway Company.	2. Name or Description of brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
London, Tilbury, and Southend.	Westinghouse Automatic Brake. (36 engines fitted. *See* Return, No. 1.)		1 and 2. Nil.	422,661 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 5	6.53 a.m. Upminster to Fenchurch Street, delayed 6 minutes at Upminster, Pipe from donkey engine to main reservoir frozen on engine No. 5. Hand brakes used Upminster to Plaistow, where engines were changed.	
		„ 6	7.50 a.m. Shoebury to Fenchurch Street, delayed 2 minutes at Barking. Pipe from donkey engine to main reservoir frozen on engine No. 7. Hand brake used Tilbury to Barking, where engines were changed.	
		Feb. 9	6.45 a.m. Southend to Fenchurch Street, no delay. Union nut on pipe connecting the air reservoirs on engine No. 28 leaking. Hand brake used Southend to Tilbury, where engines were changed.	
		„ 26	11.35 a.m. Shoebury to Fenchurch Street, delayed 3 minutes at Plaistow. Main steam passage to the reversing valve of donkey blocked on engine No. 4. Hand brake used Tilbury to Plaistow, where engines were changed.	
		April 6	10.1 a.m special from Plaistow to Tilbury, delayed 6 minutes at Rainham. Hose pipe burst on No. 181 third-class carriage. Hand brake used Rainham to Tilbury.	
		„ 9	6.0 a.m. Fenchurch Street to Pitsea, delayed 2 minutes at West Thurrock Junction. Brake would not release properly owing to triple valve on No. 168 third-class carriage not working freely.	
		„ 21	1.38 p.m. Fenchurch Street to Tilbury, delayed 2 minutes between Rainham and Purfleet. Delay caused by the triple valve of No. 1 first-class carriage working stiffly.	
		May 17	10.18 a.m. Tilbury to Fenchurch Street, delayed 3 minutes at Plaistow. Air pump failed on engine No. 19 owing to piston ring breaking. Hand brake used Tilbury to Plaistow, where engines were changed.	
		„ 30	5.35 p.m. Southend to Fenchurch Street, delayed 9 minutes between Burdett Road and Fenchurch Street. Delay caused by brake not releasing properly on third-class carriages Nos. 126, 143, and 146.	
Manchester and Milford.	—		—	Automatic Vacuum Brake. 23,843 miles.
Manchester, Sheffield, and Lincolnshire.	Vacuum Automatic Brake. (232 engines fitted, and 361 goods engines available for passenger trains as occasion may require. *See* Return No. 1.)		1 and 2 Nil.	1,800,957 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 3	9.5 p.m. Mansfield to Sheffield. At Worksop difficulty in releasing brake, ball valve frozen. Engine No. 188.	
		„ 5	11.24 a.m. Barnsley to Wakefield. At Staincross difficulty in releasing brake. Ball valve frozen. Engine No. 117.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brake.
Manchester, Sheffield, and Lincolnshire—*cont.*	Vacuum Automatic Brake—*cont.*	Jan. 6	12.30 p.m. London to Manchester. At Sheffield coupling pipe at rear of Great Northern brake-van No. 1066 not properly seated on plug. Pipe thrown out of shape by frost.	
		„ 7	8.45 a.m. Cleethorpes to Manchester. At Sheffield lugs on ejector steam valve broken off. Ordinary wear and tear. Engine No. 566.	
		„ 11	11.10 a.m New Holland to Cleethorpes. At Great Coates brake slow in releasing itself. Tender piston bush leaking and piston rod bent. Ordinary wear and tear. Engine No. 68.	
		„ 13	11.5 p.m. Barnsley to Wakefield between Smithies and Staincross, leakage due to drip trap ball valve not working properly. Some foreign substance present. Neglect of staff. Engine No. 171.	
		Feb. 9	5.10 p.m. Manchester to Marple. At Ardwick difficulty in recreating vacuum, nozzle of ejector slightly damaged. Engine No. 575. Neglect of staff.	
		„ 19	6.5 a.m. Barnsley to Penistone, near Barnsley. Difficulty in recreating vacuum attributable to on old washer getting into train pipe and thence under clappet valve. Engine No. 266.	
		Mar. 7	5.35 p.m. Wakefield to Barnsley. At Hare Park and Ryhill difficulty in releasing brake rolling ring twisted in cylinder of brake carriage No. 885.	
		May 31	12.30 p.m. Sheffield to Barnsley. At Meadow Hall after starting brake went on, supposed to be due to something getting under clappet valve. Engine No. 620.	
		June 18	1.40 p.m. Doncaster to Sheffield, between Mexbro' and Swinton. Leakage in train pipe, clappet valve washer broken, ordinary wear and tear. Engine No. 267.	
		„ 26	11.20 a.m. Sheffield to Nottingham, between Woodburne and Darnall Junctions. Ejector steam pipe broke, ordinary wear and tear. Engine No. 165.	
Manchester South Junction and Altrincham.	Automatic Vacuum Brake. (11 engines fitted. *See* Return No. 1.)		1 Nil. 2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	115,582 miles.
		Jan. 20	The driver of the 1.13 p.m. train from Oxford Road Station (Manchester to Bowdon) overran Sale station 3 carriage lengths owing to his miscalculating the distance.	
Maryport and Carlisle	- -	No failures reported.	——	Automatic Vacuum Brake. 95,392 miles.
Mawddwy - -	- - -	No failures reported.	——	Automatic Vacuum Brake. 8,208 miles.
Mersey Railway -	- - - -	No failures reported.	——	Vacuum Automatic Continuous Brake. 133,156 miles.

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Metropolitan	Automatic Vacuum Brake. (70 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	944,625 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	91,841 trains.
		Jan. 3	A down train was delayed three minutes at Harrow through No. 11 engine being short of steam, thus causing the brake to go on before arriving at the usual stopping place. Fault of servant.	
		„ 3	An up circle train was delayed two minutes at Aldgate by the wheels of No. 73 coach skidding, found to be caused by the india-rubber rolling ring in the brake cylinder having become twisted.	
		„ 4	An up circle train was delayed at South Kensington Junction two minutes, the driver being unable to blow off his brake after stopping at a danger signal, owing to want of steam. Engine No. 18.	
		„ 6	A down train to Aylesbury was delayed at Chalfont Road four minutes thawing the couplings between a luggage van and a coach. They had become frozen by severe weather.	
		„ 8	An up circle train was delayed seven minutes through a coupling admitting air when placed on the dummy, caused by ice accumulating in the groove. Coach No. 272.	
		„ 28	A down train was delayed two minutes at Swiss Cottage blowing off the brake after stopping short of station platform, the driver having applied it from engine No. 67 too sharply, and the train was stopped before the vacuum could be recovered.	
		„ 29	A down train was delayed two minutes between New Cross and Bishopsgate by the brake on No. 181 coach failing to release itself. It was subsequently discovered the india-rubber piston gland packing ring was worn out.	
		Feb. 13	An up Hammersmith train lost five minutes, the driver being unable to keep the brake off the wheels. On examination it was found the vacuum gauge on engine No. 59 was too light.	
		„ 14	A down train from Baker Street East lost four minutes through the brakes being on, and could not be released. It was subsequently found to be due to the twisting of an india-rubber rolling ring in the cylinder under No. 268 coach.	
		„ 17	A down train from Baker Street East lost four minutes through the brake on No. 359 coach being on. It could not be entirely released as the passenger communicator had been tampered with.	
		March 3	A down train from Aldgate lost two and a half minutes to Edgware Road through a leakage at rear end of train, the dummy having become twisted and the coupling did not consequently make a good joint. No. 260 coach.	
		„ 11	Three minutes were lost with a down Chesham train through difficulty in keeping the brake off the wheels, caused by dirt in the ejector of No .3 engine.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Metropolitan—*cont.*	Automatic Vacuum Brake —*cont.*	March 27	A down Harrow train was delayed two and a half minutes at Neasden changing engines. The ejector steam valve could not be shut, thought to have been caused by some obstacle on the valve seating, as no defect could be found. Engine No. 14.	
		April 25	An up New Cross train was delayed three minutes at Baker Street, the engine being unable to start. This was subsequently found to be due to the failure of the india-rubber rolling ring in the cylinder of No. 290 coach.	
		June 28	Four minutes were lost between New Cross and Edgware Road stations by the brake being hard on the wheels of No. 250 coach. This was subsequently found to be due to the india-rubber gland packing of the cylinder piston being worn.	
Metropolitan District -	Westinghouse Automatic Brake. 54 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	759,653 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 5	The 7.30 a.m. down circle train from High Street, Kensington, was delayed two minutes at Sloane Square in consequence of the brake of No. 67 third-class brake coach hanging up, due to triple valve being frozen.	
		„ 7	With the 2.34 p.m. train rrom Wimbledon delay was experienced between that station and Mansion House, owing to the brake going on No. 105 second-class coach, due to the triple valve being frozen.	
		Feb. 28	The 9.8 a.m. train from New Cross came to an abrupt stop close to Monument station, owing to one of the brake hose-couplings being blown out of the india-rubber hose-pipe, causing the brakes to be applied.	
		May 4	On leaving Whitechapel with the 2.29 p.m. train the air-pump of No. 15 engine failed, necessitating the hand-brakes being used until it was put right.	
		June 20	With the 11.29 a.m. train from Hammersmith there was a delay at Gloucester Road owing to some difficulty with the brake on Nos. 22 and 42 third-class coaches, due to dirt in the triple valve.	
		„ 28	The 12.40 p.m. down circle train from High Street was pulled up by the brake when entering Gower Street station, owing to the main air-pipe of No. 102 third-class coach becoming detached.	
Midland -	Vacuum Automatic Brake. (1,251 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	7,053,649 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 3	7.15 a.m. train from Derby to Manchester. 11 minutes delay at stations between New Mills and Stockport. Releasing brake by small ejector, in consequence of one of the wings of large ejector-valve breaking on engine No. 1563.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
Midland—*cont.*	Vacuum Automatic Brake. —*cont.*	March 27	10.55 p.m. excursion train from Leicester to Leeds. 15 minutes delay at Sandiacre by stopping to examine for slight leakage. Union nut under foot-plate of engine No. 815 had slackened.	
	Westinghouse Automatic Air Brake (7 engines fitted. *See* Return No. 1.)		1. and 2. Nil.	485 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		„ 26	10.10 a.m. special train from St. Pancras to Luton. 4 minutes delay at St. Alban's, owing to air pump of engine No. 1675 ceasing to work, in consequence of the ports being clogged.	
Midland and Great Northern Joint (Eastern Section).	- - -	No failure reported.	—	Automatic Vacuum. 137,033 miles. Westinghouse Automatic brake. 38,534 miles.
Midland and South-Western Junction.	- - -	No failures reported.	—	Automatic Vacuum. 97,840 miles.
Neath and Brecon -	- - -	No failures reported.	—	Automatic Vacuum. 14,609 miles.
North-Eastern - -	The Westinghouse Automatic Brake. (506 engines fitted, exclusive of 169 goods engines used occasionally.)		1. Nil.	5,843,804½ miles.
			2. *Failure or partial failure to act under ordinary circumstances to stop a train when required.*	
		March 14	9.0 p.m. train, Leeds to Hull, engines Nos. 369 and 568. Overran the platform at Milford Junction by two carriage lengths. Fault of driver.	
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 1	6.25 p.m. train, York to Edinburgh, engine No. 1519. 4 minutes at Raskelf, the brake being on upon E.C. van No. 45. The guard observing the pressure decreasing on the gauge applied the brake from the van and found that the inch tap between the rear carriage and the van was shut.	
		„ 2	7.0 a.m. train, West to East Hartlepool. engine No. 632. 5 minutes at Ballast crossing by the brake going on upon the train. The top valve spring in driver's valve being defective.	
		„ 6	12.45 p.m. train, Whitley to Newcastle, engine No. 1430. 10 minutes at Tynemouth, attaching waggon No. 8448 and then detaching it, owing to the main (iron) pipe being split. Faulty material.	
		„ 10	1.40 a.m. train, York to Normanton, engine No. 701. 5 minutes lost. The donkey pump stopped. Pump out of repair.	
		„ 15	10.18 p.m. train, Newcastle to York, engine No. 902. 6 minutes at York. The donkey pump stopped. The reversing piston defective.	
		„ 19	10.0 a.m. train, Tynemouth to Newcastle, engine No. 279. 5 minutes at Tynemouth. Hose-pipe on waggon No. 60,274 burst. Defective pipe.	

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North-Eastern—*cont.*	The Westinghouse Automatic Brake—*cont.*	Feb. 2	6.50 a.m. train, York to Normanton, engine No. 1441. 7 minutes at Old Station cabin, Castleford. The brake going on upon train by a leak at the air-pipe from donkey pump to main reservoir.	
		„ 5	10.30 p.m. train, Edinboro' to York, engines Nos. 925 and 366. 5 minutes at Black Banks. The brake on upon G.N. van No. 953. The triple-valve joint leaking badly on engine No. 366. Fault of assistant brake fitter.	
		„ 6	7.35 a.m. train, Pateley Bridge to Harrowgate, engine No. 1431. 4 minutes at Hampsthwaite. Hose-pipe on horse-box No. 222 burst. Defective hose-pipe.	
		„ 13	8.25 a.m. train, Newcastle to Sunderland, engine No. 72. 3 minutes at Park Lane. The air pipe from the donkey pump to main reservoir broken at the collar near the pump. Faulty material.	
		„ 13	7.0 p.m. train, Scarboro' to York, engine No. 186. 6 minutes at Gas Works, Scarboro'. The brake being on upon the rear van No. 181. Fault of driver.	
		„ 17	10.5 a.m train, Newcastle to York, engine No. 1470. 2 minutes at Danby Urske. The hose-pipe on Midland composite carriage No. 905 burst.	
		„ 20	11.10 a.m. train, Saltburn to Tebay, engine No. 1098. 4 minutes at Newport. The hose-pipe on Midland horse-box No. 351 burst.	
		„ 21	1.38 p.m. train, Leeds to West Hartlepool, engine No. 1530. 5 minutes at Stockton. The brake rigging on third-class carriage No. 588 coming down. The bolt in truss rod having lost out.	
		„ 27	11.30 p.m. train, Hornsea to Hull, engine No. 167. 8 minutes lost. The air-pipe from donkey pump governor to driver's valve broken at the mitre next to governor. Faulty material.	
		March 4	5.40 p.m. train, York to Newcastle, engine No. 1479. 5 minutes at Thirsk. The hose-pipe on L. & Y. third-class carriage No. 2138 burst.	
		„ 6	7.43 p.m. train, Harrogate to Bradford, engine No. 1762. 3 minutes at Harrogate owing to a leak at the joint between the main pipe and triple valve on third-class carriage No. 2410. The brake examiner had not tested the apparatus after remaking the joints.	
		„ 8	2.35 p.m. train, South Shields to Sunderland, engine No. 1436. 2 minutes lost. Donkey pump stopped. Governor steam valve-spring broken. Faulty material.	
		„ 13	3.34 p.m. train, Stockton to Thirsk, engine No. 838. 6 minutes at Eaglescliffe. Hose-pipe on L. and N.W. carriage-truck No. 637 burst.	
		„ 20	12.0 noon train, Richmond to Darlington, engine No. 954. 6 minutes at Catterick. The washer in hose-coupling on engine being worn caused a leak. Want of inspection. Fault of servants.	
		„ 20	4.27 p.m. train, Hull to York, engine No. 1327. 7 minutes between Pocklington and Fangfoss. The pipe between main pipe and triple valve on engine broken. Faulty pipe.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
North-Eastern—*cont.*	The Westinghouse Automatic Brake —*cont.*	March 21	6.0 p.m. train, Harrogate to Leeds, engine No. 1786. 5 minutes at Starbeck. The hose-pipe on carriage truck No. 91 burst.	
		„ 26	6.47 p.m. train, Newcastle to York, engine No. 1505. 10 minutes between Chester-le-Street and Chester Moor. The hose-pipe on meat-van No. 4501 burst.	
		„ 29	8.30 a.m. train, Newcastle to Thirsk, engine No. 1519. 5 minutes at Usworth Junction. The hose-pipe on composite carriage No. 2503 burst.	
		„ 29	10.10 a.m. train, Carlisle to Newcastle, engine No. 367. 10 minutes at Carlisle. Transferring horse-box No. 90 from front to rear of train. The half-inch cock broken. Faulty material.	
		April 5	2.30 p.m. train, Edinboro' to York, engine No. 852. 5 minutes at Beal. The air-pipe from the donkey pump to main reservoir broken near the pump. Faulty pipe.	
		„ 13	6.15 a.m. train, Newcastle to Edinbro', engine No. 1621. 4 minutes at Alnmouth. The hose-pipe on G.N. horse-box No. 1347 burst. Defective pipe.	
		„ 14	8.15 a.m. train, Newcastle to Carlisle, engine No. 366. 10 minutes at Brampton. The brake-rigging on van No. 80 coming down. The split pin in one of the hanger bolts broken. The bolt worked out. Fault of servant.	
		„ 16	10.0 a.m train, York to Edinbro', engine No. 1505. 3 minutes at Northallerton. The half-inch cock on G.N van No. 2499 broken. Faulty material.	
		„ 19	2.30 p.m. train, Edinbro' to York, engine No. 1628. 2 minutes at Waverley Station Yard. The brake being on upon E.C. corridor first-class carriage No. 204. Fault of Driver.	
		„ 28	10.50 p.m. train, Malton to Driffield, engine No. 1502. 3 minutes at Settrington. The hose-pipe on Midland horse-box No. 186 burst. Defective pipe.	
		May 21	11.0 a.m. train, Leeds to York, engine No. 1746. 8 minutes lost between Church Fenton and York. The donkey pump stopped. The head of the bolt in reversing valve plate broken. Faulty material.	
		„ 30	5.30 a.m. train, Hull to Leeds, engine No. 1533. 4 minutes near Marsh Lane tunnel. The nipple being pulled out of the hose-pipe between engine and tender.	
		June 6	3.20 p.m. train, York to Newcastle, engine No. 53. 4 minutes between Shipton and Tollerton. The hose-pipe on Midland luggage composite No. 909 burst. Defective pipe.	
		„ 10	2.20 p.m. train, Sunderland to Newcastle, engine No. 1156. 7 minutes at Monkwearmouth cabin. The hose-pipe on third-class carriage No. 383 burst.	
		„ 19	2.50 p.m. train, Harrogate to Borobridge, engine No. 1340. 2 minutes at Starbeck. The hose-pipe on Midland horse-box No. 81 burst.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
North-Eastern—*cont.* -	The Westinghouse Automatic Brake —*cont.*	June 21	12.40 p.m. train, York to Scarboro', engine No. 1772. 2 minutes between Hutton's Ambo and Malton. Owing to a leak at the air-pipe from driver's valve to main reservoir. The union nut at the reservoir end having slacked back.	
		No failures reported.	——	Vacuum Automatic Brake. 13,209 miles.
North London -	Automatic Vacuum Brake. (79 engines fitted. *See* Return No. 1.)		1 and 2. Nil.	921,285 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		March 2	Five minutes delay at Acton through brakes not working properly on Nos. 80 and 82 brake-vans. Leakage at dummy.	
North Staffordshire -	- - -	No failures reported.	——	Automatic Vacuum 640,642 miles.
North Wales (Narrow Gauge).	- - -	No failures reported.	——	Westinghouse.
Pembroke and Tenby -	- - -	No failures reported.	——	Automatic Vacuum 40,707 miles.
Pontypridd, Caerphilly, and Newport.	- - -	No failures reported.	——	Vacuum Automatic Brake. 6,295 miles.
Rhondda and Swansea Bay.	- - -	No failures reported.	——	Automatic Vacuum 27,158 miles.
Rhymney - -	- - -	No failures reported.	——	Westinghouse Automatic Brake. 99,034 miles.
Severn and Wye and Severn Bridge.	- - -	No failures reported.	——	Vacuum Automatic Brake. 31,654 miles.
Somerset Joint Committee.	- - -	No failures reported.	——	Vacuum Automatic Brake. 294,496 miles.
South-Eastern - -	Automatic Vacuum Brake. (347 engines fitted. *See* Return No. 1.)		1. and 2. Nil.	2,969,235 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 2	The 7.20 p.m. Ashford to Margate train was delayed seven minutes near the Ramsgate Branch Junction at Ashford owing to the tender (No. 192) brake dragging. It was found that ice had formed in the passages near the ball-valve.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
South-Eastern—*cont.*	Automatic Vacuum Brake —*cont.*	Jan. 2	The 7.15 p.m. up Hastings train was delayed four minutes at Waterloo owing to the driver being unable to release the brake. This was caused by ice having formed in the ball-valve chamber of tender No. 31.	
		„ 2	The 12.52 p.m. Charing Cross to Reading train was delayed two minutes at Cannon Street owing to the brake-hose coupling of carriage truck No. 116 not being properly seated on the dummy.	
		„ 3	The 5.0 p.m. Blackheath to Charing Cross train was delayed two minutes at Cannon Street owing to the brake-coupling of engine No. 181 being frozen to the dummy.	
		„ 3	The 7.10 p.m. Charing Cross to Chatham train was delayed six minutes at Hither Green Junction owing to a difficulty in keeping the brake off. It was found that ice had formed in the ball-valve chamber of engine No. 64.	
		„ 3	The 6.4 p.m. up Dartford train was delayed four minutes at Bexley owing to ice having formed in the ball-valve chamber of No. 117 tender, and the driver having to apply heat to the chamber.	
		„ 3	The 9.25 a.m. Charing to Addiscombe Road train was delayed five minutes in starting. The brake-hose coupling on engine No. 312 was frozen to the dummy and had to be thawed before the brake connection could be made.	
		„ 4	The 11.20 p.m. up Dartford train was delayed eight minutes in starting owing to the brake-block being frozen to the wheels of the vehicles. The train had been at rest 40 minutes with the brake on.	
		„ 4	The 11.10 p.m. empties, Charing Cross to Rotherhithe Road, were delayed 25 minutes at Spa Road owing to ice having formed in the ball-valve chamber of engine No. 229 and preventing the release of the brake.	
		„ 5	The 9.28 a.m. down Reading train was delayed four minutes at Charing Cross owing to the rubber pipe at back of tender of engine No. 229 being blocked with ice, necessitating the brake being leaked off the train.	
		„ 5	The 3.10 p.m. down Dartford train lost four minutes on the journey owing to the tender (No. 217) brake dragging. This was caused by ice having formed in the ball-valve chamber.	
		„ 5	The 3.10 p.m. Cannon Street to Dartford train lost three minutes between Belvedere and Erith owing to the brake dragging, in consequence of some ice having formed in the ball-valve chamber of engine No. 217.	
		„ 6	The 4.22 p.m. up Tonbridge train was delayed three minutes at Edenbridge owing to the brake-hose coupling on carriage truck No. 156 not being properly seated on the dummy. Some frozen snow being on the dummy.	
		„ 6	The 9.25 a.m. Charing Cross to Edenbridge train was delayed five minutes at Cannon Street owing to the brake-hose coupling being frozen to the dummy of brake-van No. 105.	

1. Name of Railway Company.	2. Name or Description of brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the Cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
South-Eastern—*cont.* -	Automatic Vacuum Brake —*cont.*	Jan. 8	The 4.20 p.m. up Woolwich train was delayed two minutes at Cannon Street owing to the coupling not being properly seated on the dummy of luggage van No. 157. The hose pipe being frozen.	
		„ 8	The 4.5 p.m. Elham Valley train ex. Margate was delayed four minutes at Dover owing to a leakage in the train. The india-rubber washers had become rigid owing to the severe frosty weather and caused a leakage at the couplings.	
		„ 8	The 7.25 a.m. down Tonbridge train was delayed five minutes at Charing Cross owing to the ball of screw coupling of engine No. 228 flying round when starting and disconnecting the brake pipes.	
		„ 8	The 8.30 a.m. Dorking to Red Hill train was delayed two minutes at Box Hill owing to the driver being unable to release the brake on the train. Ice having formed in the train pipe of tender No. 229.	
		„ 11	The 6.5 p.m. Charing Cross to Dorking train was delayed one minute at London Bridge owing to a leakage in the brake. It was found that when engine No. 93 was attached to the train at Cannon Street the washer of brake coupling had been left on the dummy.	
		„ 24	The 9.28 a.m. Charing Cross to Reading train was delayed four minutes at Dorking owing to the driver being unable to release the brake on tender No. 245. It was found that some ice had formed in the air passage between the train pipe and the ball valve.	
		„ 25	The 8.0 a.m. Hastings to Charing Cross train was delayed seven minutes at Hastings owing to the driver being unable to release the brake on engine No. 84. The passage in the connection hose-pipe between the train-pipe and engine cylinder was found to be choked with dirt.	
		Feb. 6	The 1.25 p.m. up Reading train lost two minutes between Blackwater and Wellington College owing to a leakage in train brake. It was found that the brake coupling on carriage truck No. 214 had not been properly placed on the dummy.	
		„ 15	The 4.20 p.m. up Blackheath train was delayed three minutes at Blackheath owing to the india-rubber washer of brake coupling on engine No. 228 having been lost.	
		„ 19	The 8.15 a.m. up Reading train was delayed two minutes at Waterloo owing to the driver being unable to release the brake on the tender of engine No. 90. It was found that the piston-rod packing ring of brake was defective.	
		„ 22	The 7.15 a.m. up Reading train was delayed eight minutes at Red Hill owing to the driver being unable to keep the brake off the tender (No. 229) wheels. This was caused by the ball-valve chamber having become frozen.	

1. Name of Railway Company.	2. Name or Description of Brake which failed or caused delay.	3. Date of Failure.	4. Particulars of Circumstances relating to the cause of Failure, &c. under the three headings given on page 30.	5. Number of Miles run by Trains fitted with Continuous Brakes.
South Eastern—*cont.*	Automatic Vacuum Brake —*cont.*	Feb. 24	The 4.25 p.m. up Dover train was delayed two minutes at Ashford shunting second-class carriage No. 196 out of the train. The iron train-pipe of this carriage was broken causing a leakage in the train brake.	
		,, 24	The 5.20 a.m. down train viâ Red Hill was delayed two minutes at Cannon Street owing to brake hose-pipe on second-class carriage No. 825 being defective.	
		April 14	The 9.0 a.m. down Woolwich train was delayed two minutes at Dartford in consequence of the union nut of brake steam-pipe at front plate of cab giving out. Engine No. 161.	
		,, 20	The 4.30 p.m. empty train, Rotherhithe Road to Charing Cross, was delayed three minutes at Waterloo owing to the ball of screw coupling on engine No. 241 swinging round and breaking the castings of the brake pipe.	
		May 5	The 10.25 a.m. up Dartford train was delayed four minutes in starting owing to engine No. 328 being unable to form a vacuum in the train. It was found that the brake pipe of luggage van No. 109 was not properly seated on the dummy.	
		,, 7	The 6.35 a.m. Margate to Dover train lost four minutes between Ramsgate and Canterbury. This was probably due to engine No. 22 not having as high a vacuum as engine No. 20, which had previously worked the train.	
		,, 9	The 5.2 p.m. down Tonbridge train was delayed two minutes at Charing Cross owing to a small piece of cotton waste having got under the lever of guard's valve in third-class carriage No. 2128 and preventing engine No. 291 forming a vacuum.	
		,, 15	The 1.15 p.m. empty train from Rotherhithe Road was delayed 10 minutes at Surrey Canal Junction owing to the screw coupling-ball of engine No. 29 flying round and breaking the hose coupling of third-class carriage No. 1169.	
		,, 19	The 3.35 p.m. empty train, Rotherhithe Road to Charing Cross, lost six minutes owing to engine No. 234 working with a less vacuum than engine No. 267, which had worked the train a portion of the journey.	
		,, 30	The 6.22 p.m. Charing Cross to Plumstead train was delayed two minutes at Cannon Street owing to the hose coupling of carriage truck No. 138 not being properly seated on the dummy.	
		June 2	The 9.30 p.m. Charing Cross to Dover train lost 14 minutes between Cannon Street and Folkestone Junction owing to a leakage in the brake. It was found that a washer was twisted in the brake coupling of a L. & N.W. horse box.	
		,, 15	The 2.8 p.m. Red Hill to Tonbridge train lost three minutes on the journey owing to a leakage in the brake. Some dirt had got into the clappit valve of engine No. 87 and caused the leakage.	

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South-Eastern—*cont.*	Automatic Vacuum Brake—*cont.*	June 26	The 7.30 a.m. Gomshall to Charing Cross train was delayed four minutes at Cannon Street owing to a difficulty in coupling the brake pipes between engine No. 305 and carriage truck No. 141. It was found that the lug of the engine coupling was a little too thick.	
		„ 28	The 11.12 a.m. Addiscombe Road to Charing Cross train was delayed two minutes at Cannon Street by the washer of brake coupling being knocked off by shunter when uncoupling engine No. 329.	
Taff Vale - -	Automatic Vacuum Brake. (47 engines fitted. *See* ReturnNo.1.)		1 and 2. Nil.	219,642¼ miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Feb. 10	Brake-block too tight on third-class coach No. 185. Delayed nine minutes adjusting block at Llandaff station.	
		March 17	Automatic ejector steam-pipe broke near Hafod. Two minutes delay in releasing brake. Train worked to destination without continuous brake.	
		June 27	Brake-piston on coach No. 15 failed to act, at Treherbert. Delay, 12 minutes.	
		„ 29	Drip-valve of brake upon engine stuck, and thereby prevented the release of the brake, causing a delay of 10 minutes at Ferndale.	
West Lancashire -	- - -	No failures reported.	—	Westinghouse Automatic Brake 101,380 miles.
Wirral - - -	- - -	No failures reported.	—	Automatic Vacuum Brake. 85,375 miles.
Wrexham, Mold, and Connah's Quay.	- - -	No failures reported.	—	Automatic Vacuum Brake. 21,306 miles.
SCOTLAND.				
Caledonian - -	Westinghouse Automatic Brake. (367 engines fitted. *See* ReturnNo.1.)		1 & 2. Nil.	3,522,946 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 4	7.50 p.m. train, Strathaven to Hamilton delayed 5 minutes at Earnock. Cause: copper pipe breaking on Caledonian engine No. 225.	
		„ 9	11.45 a.m. train, Edinburgh to Glasgow delayed 3 minutes at Rutherglen. Cause: copper pipe breaking on Caledonian carriage truck No. 42.	
		March 12	6.12 a.m. train, Carlisle to Perth, delayed 2 minutes at Stirling. Cause: hose-pipe bursting on West Coast Joint Stock third-class carriage No. 450.	

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Caledonian—*cont.*	Westinghouse Automatic Brake—*cont.*	April 9	11.55 a.m. train, Dundee to Blairgowrie, delayed 3 minutes at Lockie. Cause: hose-pipe bursting on Caledonian engine No. 18.	
		May 29	1.12 p.m. train, Carlisle to Edinburgh, delayed 4 minutes at Auchencastle. Cause: hose-pipe bursting on Caledonian brake-van No. 68.	
		June 1	9.10 p.m. train, Edinburgh to Carstairs, delayed 3 minutes at Curriehill. Cause: copper pipe breaking on Caledonian engine No. 428.	
		„ 2	4.20 p.m. train, Glasgow to Dumfries, delayed 3 minutes at Uddingston. Cause: hose-pipe bursting on Caledonian engine No. 244.	
		„ 8	10.0 p.m. train, Gourock to Glasgow, delayed 2 minutes at South Barr. Cause: copper pipe breaking on Caledonian engine No. 95.	
		„ 8	4.30 p.m. train, Carlisle to Edinburgh, delayed 6 minutes at Greskine. Cause: hose-pipe bursting on West Coast Joint Stock composite No. 403.	
		„ 9	1.5 p.m. train Stirling to Oban, delayed 8 minutes between Callander and Luib. Cause: copper pipe breaking on Caledonian Engine No. 185.	
		„ 16	10.0 a.m. train, Edinburgh to Glasgow, delayed 5 minutes between Mid Calder and Glasgow. Cause: copper pipe breaking on Caledonian engine No. 108.	
		„ 20	9.45 p.m. train, Edinburgh to Glasgow, delayed 9 minutes between West Calder and Addiewell. Cause: copper pipe breaking on Caledonian engine No. 288.	
		„ 27	12.5 p.m. train, Perth to Aberdeen, delayed 2 minutes between Portlethen and Cove. Cause: hose-pipe bursting on West Coast Joint Stock brake-van No. 165.	
		„ 27	3.25 p.m. train, Edinburgh to Balerno, delayed 6 minutes at Slateford. Cause: hose-pipe bursting on Caledonian third-class carriage No. 481.	
		No failures reported.	——	Vacuum Brake. 3,533 miles.
Glasgow and South-Western.	Vacuum Automatic Brake. (96 engines fitted. *See* Return No. 1.)		1 and 2 Nil.	1,149,014 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 1	7.10 p.m. ex. Ardrossan was detained 7 minutes at Kilwinning and 7 minutes at Irvine by rolling-ring of cylinder of engine No. 188 getting jammed.	
		„ 6	5.30 p.m. ex. Ayr was detained 4 minutes at Prestwick by brake failing. Ball-valves on engine No. 28 frozen.	
		March 10	6.30 p.m. ex. Glasgow was detained 13 minutes at Clyde Junction. Clappit-valve joint of engine No. 95 giving way.	
		„ 12	7.27 a.m. ex. Largs was detained 2 minutes at Kilwinning. Washer on face of clack-valve defective. Engine No. 70.	

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Glasgow and South-Western—*cont.*	Vacuum Automatic Brake—*cont.*	April 24	6.9 p.m. ex. Glasgow was detained 6 minutes at Dalry Junction releasing brake. Steam-pipe for vacuum ejector broken at flange. Engine No. 111.	
		May 24	2.15 p.m. ex. Glasgow was detained 11 minutes at Castlehill Junction by nut of injector slacking. Engine No. 139. (Disc slightly off face.)	
		June 21	3.32 p.m. ex. Glasgow was detained 6 minutes at Bridge of Weir by brake binding on third-class No. 401. (Brake not equally adjusted.)	
			1 and 2. Nil.	548,163 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
	Westinghouse Automatic Brake. (102 engines fitted. *See* Return No. 1.)	Jan. 3	5.50 a.m. ex. Glasgow was detained 5 minutes at Troon and 21 minutes at Ayr by steam-pipe nipple breaking. Engine No. 28.	
		„ 6	12.46 p.m. ex. Girvan was detained 7 minutes on journey by brakes binding on train.	
		„ 20	4.15 p.m. ex Ardrossan was detained 15 minutes at Glengarnock by joint of small copper pipe leading from main-pipe to triple-valve of engine No. 111 giving way.	
		„ 25	6.15 p.m. ex. Greenock was detained 12 minutes on journey by hose-pipe between engine and tender slipping off nipple. Engine No. 130.	
		„ 27	10.0 a.m. ex. Stranraer was detained 4 minutes at Nith Bridge by coupling-nut of pipe leading from pump to reservoir slacking back. Engine No. 157.	
		Feb. 6	7.20 a.m. ex. Stranrear was detained 5 minutes on journey by brake binding on horse-box No. 64. Leak in main-pipe.	
		March 7	7.35 a.m. ex. Girvan was detained 7 minutes on journey by pipe between engine and tender (No. 63) slipping off nipple.	
		„ 27	6.15 p.m. ex. Glasgow was detained 4 minutes at Dalry by coupling-nut under foot-plate slacking back. Engine No. 40.	
		June 7	10.7 a.m. ex. Girvan was detained 2 minutes at Stinchar Bridge, owing to air-pipe of engine No. 313 bursting.	
		„ 13	12.35 p.m. ex. Stranraer was detained 10 minutes on journey by pipe between engine and tender (No. 132) slipping off nipple.	
		„ 18	7.20 a.m. ex. Glasgow was detained 2 minutes on journey by brake binding on L. & N.W. compo. No. 1,125.	
		„ 23	7.45 p.m. special ex. Prestwick was detained 9 minutes at Barassie by steam-cock of engine No. 10 getting jammed.	
		„ 25	7.50 a.m. ex. Ardrossan was detained 4 minutes on journey by brake binding. Pump on engine No. 125 defective.	

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Great North of Scotland	Westinghouse Automatic Brake. (90 engines fitted. *See* Return No.1.)		1 and 2. Nil.	470,459 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 16	12.50 p.m. train, Fraserburgh to Aberdeen, stopped near distant signal at Kittybrewster, owing to hose-pipe on fish-truck No. 2,016 bursting. 3 minutes detention.	
		Feb. 16	10.20 a.m. train, Elgin to Aberdeen, detained 5 minutes at Buckie, owing to hose pipe on fish-truck No. 2376 bursting.	
		May 2	8.30 a.m. train, Ballater to Aberdeen, stopped between Banchory and Crathes, owing to coupling nut of air-pipe leading from pump to main reservoir of engine No. 4 becoming slack. 2 minutes detention.	
		„ 14	7.30 p.m. train, Aberdeen to Banchory, detained 4 minutes at Aberdeen, owing to hose-pipe on third-class carriage No. 20 bursting.	
		„ 30	8.0 a.m. train, Aberdeen to Ballater, stopped near Dinnet, owing to main air pipe of N.E. saloon carriage No. 131 bursting. 3 minutes detention.	
		June 18	5.40 p.m. train, Keith to Elgin, detained 8 minutes at Keith, owing to hose-pipe coupling washer becoming defective.	
		„ 20	1.0 p.m. train, Peterhead to Aberdeen, stopped when entering Maud Station, owing to hose-pipe on fish-truck No. 2262 bursting. 3 minutes detention.	
		„ 23	12.55 p.m. train, Keith to Aberdeen, stopped near Huntly, owing to hose-pipe on H.R. luggage van No. 2 bursting. 3 minutes detention.	
Highland - -	Automatic Vacuum Brake. (95 engines fitted. *See* Return No 1).		1 and 2. Nil.	517,282 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 10	The 8.45 a.m. train, Tain to Inverness. Washer of clappet-valve of engine No. 61 broke, and train had to be worked from Tain to Inverness without vacuum brake.	
		„ 26	The 7.5 a.m. mail train, Perth to Inverness, was detained 10 minutes at Kingussie, owing to hose-pipe of No. 3 Highland Railway third-class carriage having failed at coupling-ring through wear and tear.	
	Newall's Continuous Hand Brake.	No failures reported.	—	25,016 miles.
North British - -	Westinghouse Automatic Air Brake. (289 engines fitted. *See* Return No.1.).		1 and 2. Nil.	Westinghouse 3,865,667 miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 1	Passenger train, Dundee to Glasgow, detained 3 minutes at Polmont by Westinghouse pump failing on engine No. 594. Failure of machinery.	
		„ 8	Passenger train, Glasgow to Thornton, detained 11 minutes between Queen Street and Cowlairs by hose-pipe bursting between tender and engine No. 236. Failure of material.	

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North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	Jan. 11	Passenger train, Edinburgh to Berwick, detained 6 minutes between Edinburgh and Inveresk by air pump slide valve becoming defective on engine No. 400. Failure of machinery.	
		„ 13	Passenger train, Thornton to Dundee, detained 3 minutes at Guardbridge by air-pipe breaking on tender No. 352. Failure of material.	
		„ 26	Passenger train, Aberdeen to Edinburgh, detained 6 minutes at Dundee by Westinghouse pump failing on engine No. 36. Failure of machinery.	
		„ 28	Passenger train, Edinburgh to Larbert, detained 2 minutes at Edinburgh by hose-pipe bursting on Caledonian Railway brake composite carriage No. 7. Failure of material.	
		Feb. 2	Passenger train, Hamilton to Hyndland, detained 5 minutes on journey through triple-valve breaking on third-class brake carriage No. 657. Failure of machinery.	
		„ 7	Passenger train, Bonnybridge to Glasgow, detained 5 minutes on journey by Westinghouse pump failing on engine No. 262. Failure of machinery.	
		„ 17	Passenger train, Edinburgh to Aberdeen, detained 6 minutes at Dundee by Westinghouse pump failing on engine No. 599. Failure of machinery.	
		„ 20	Glasgow circle passenger train detained 3 minutes on journey by Westinghouse pump failing on engine No. 174. Failure of machinery.	
		„ 24	Passenger train, Aberdeen to Edinburgh, detained 7 minutes on journey by main air pipe failing on engine No. 636. Failure of material.	
		„ 26	Passenger train, Aberfoyle to Glasgow, detained 6 minutes on journey by Westinghouse pump failing on engine No. 98. Failure of machinery.	
		Mar. 2	Passenger train, Carlisle to Edinburgh, detained 27 minutes at Hawick by Westinghouse pump failing on engine No. 489. Failure of machinery.	
		„ 9	Passenger train, Dunfermline to Glasgow, detained 3 minutes between Castlecary and Dullatur by air-pipe breaking on engine No. 237. Failure of material.	
		„ 15	Passenger train, Glasgow to Balfrom, detained 7 minutes at Cowlairs by Westinghouse pump failing on engine No. 174. Failure of machinery.	
		„ 18	Passenger train, Glasgow to Edinburgh, detained 16 minutes on journey by brake failing to release itself on East Coast Joint Stock carriage No. 171, East Coast Joint Stock composite carriage No. 8, and brake-van No. 83. Cause not ascertained.	
		„ 24	Passenger train, Glasgow to Edinburgh, detained 4 minutes at Bishopbriggs by hose-pipe bursting on Great Northern Railway saloon carriage No. 1706. Failure of material.	
		„ 27	Passenger train, Edinburgh to Dundee, detained 4 minutes at Burntisland by Westinghouse pump governor pipe failing on engine No. 424. Failure of machinery.	
		„ 28	Passenger train, Edinburgh to Glasgow, detained 6 minutes at Haymarket by Westinghouse pump failing on engine No. 319. Failure of machinery.	

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North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	March 31	Passenger train, Aberdeen to Edinburgh, detained 5 minutes at St. Vigean's Junction by hose-pipe bursting on East Coast Joint Stock third-class carriage No. 158. Failure of material.	
		,, 31	Passenger train, Carlisle to Edinburgh, detained 4 minutes at Carlisle by hose-pipe bursting on Midland Railway composite carriage No. 250. Failure of material.	
		April 2	Passenger train, Hawick to Edinburgh, detained 4 minutes at Hawick by Westinghouse pump failing on engine No. 331. Failure of machinery.	
		,, 4	Passenger train, Edinburgh to Stirling, detained 11 minutes at Haymarket by Westinghouse pump failing on engine No. 635. Failure of machinery.	
		,, 9	Passenger train, Edinburgh to Musselburgh, detained 7 minutes at St. Margaret's by hose-pipe bursting on engine No. 313. Failure of material.	
		,, 9	Passenger train, Perth to Edinburgh, detained 4 minutes at Moncrieff Tunnel by hose-pipe bursting on Midland Railway composite carriage No. 204. Failure of material.	
		,, 11	Passenger train, Edinburgh to Glasgow, detained 3 minutes at Philipstoun by hose-pipe bursting on East Coast Joint Stock composite carriage No. 20. Failure of material.	
		,, 17	Passenger train, Dundee to Edinburgh, detained 6 minutes at Burntisland by Westinghouse pump failing on engine No. 422. Failure of machinery.	
		,, 17	Passenger train, Glasgow to Edinburgh, detained 5 minutes at Greenhill by air-pipe breaking on engine No. 577. Failure of material.	
		,, 18	Passenger train, Edinburgh to Carlisle, detained 14 minutes at Arniston by air-pipe breaking at brazing on engine No. 490. Failure of workmanship.	
		,, 24	Passenger train, Kilbowie to Glasgow, detained 3 minutes at Kilbowie by hose-pipe bursting between tender and engine No. 156. Failure of material.	
		,, 28	Passenger train, Edinburgh to Aberdeen, detained 10 minutes at Esplanade station by Westinghouse pump failing on engine No. 596. Failure of machinery.	
		May 1	Passenger train, Glasgow to Edinburgh, detained 3 minutes at Roughcastle by air-pipe breaking on engine No. 576. Failure of material.	
		,, 11	Passenger train, Stirling to Edinburgh, detained 7 minutes at Oakley by air-pipe breaking on engine No. 212. Failure of material.	
		,, 12	Passenger train, Carlisle to Edinburgh, detained 3 minutes at Gorebridge by hose-pipe bursting on Midland Scotch Joint Stock composite carriage No. 51. Failure of material.	
		,, 22	Passenger train, Helensburgh to Bridgeton Cross, detained 6 minutes at Milngavie Junction by hose-pipe bursting on first-class carriage No. 241. Failure of material.	

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North British—*cont.*	Westinghouse Automatic Air Brake—*cont.*	June 3	Passenger train, Carlisle to Edinburgh, detained 3 minutes at Bowland Bridge by hose-pipe bursting on Midland Railway Pullman Car No. 33. Failure of material.	
		„ 6	Passenger train, Perth to Ladybank, detained 3 minutes between Bridge of Earn and Abernethy by hose-pipe bursting on horse-box No. 143. Failure of material.	
		„ 8	Passenger train, Edinburgh to Glasgow, detained 13 minutes at Edinburgh by Westinghouse pump failing on engine No. 321. Failure of machinery.	
		„ 8	Passenger train, Bridgeton Cross to Helensburgh, detained 5 minutes at Bridgeton Cross by Westinghouse pump failing on engine No. 314. Failure of machinery.	
		„ 12	Passenger train, Glasgow to Aberfoyle, detained 6 minutes at Blane Valley Junction by air-pipe breaking on engine No. 38. Failure of material.	
		„ 15	Passenger train, Aberdeen to Edinburgh, detained 2 minutes at Dundee by hose-pipe bursting on Great North of Scotland fish-truck No. 2272. Failure of material.	
		„ 18	Passenger train, Edinburgh to Carlisle, detained 2 minutes at Melrose by hose-pipe bursting on Midland Railway third-class carriage No. 261. Failure of material.	
		No failures reported.	—	Vacuum Automatic Brake 1,823 miles.
Portpatrick and Wigtownshire.	- - -	No failures reported.	—	Vacuum Automatic. 27,518 miles.
IRELAND.				
Belfast and County Down.	- - -	No failures reported.	—	Vacuum Automatic Brake. 239,738 miles.
Belfast and Northern Counties.	Vacuum Automatic Brake. 62 engines fitted. *See* Return No. 1.)		1 and 2. Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	458,602 miles.
		Jan. 6	The 8.15 a.m. down train was 5 minutes late leaving Belfast, owing to difficulty in raising vacuum, caused by leakage, probably due to the severe frost having kept some of the hose couplings from closing properly.	
Castlederg and Victoria Bridge Tramway Company.	- - -	No failures nor instance of delay reported.	—	Westinghouse Automatic Brake. 10,752 miles.
Cavan, Leitrim, and Roscommon Light Railway and Tramway Company, Limited.	- - -	No failures reported.	—	Automatic Vacuum Brake. 49,343 miles.

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Clogher Valley -	- - -	No failures reported.	—	Automatic Vacuum Brake. 49,289 miles.
Cork and Macroom Direct.	- - -	No failures reported.	—	Vacuum Automatic. 34,989 miles.
Cork and Muskerry Light (Including Donoughmore Extension Light Railway).	- - -	No failures reported.	—	Automatic Vacuum Brake. 67,529 miles.
Cork, Bandon, and South Coast.	Automatic Vacuum. (11 engines fitted. *See* Return No. 1.)		1. and 2. Nil.	107,461½ miles.
			3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	
		Jan. 4	3 p.m. down train from Cork. Engine No. 3 stopped short at Madore station about 30 yards. Coupling between Nos. 3 and 4 carriages opening on top of joint.	
		„ 5	3 a.m. down train and 8.15 a.m. up train. Engine No. 13. Brake not worked between Cork and Baltimore and Baltimore and Drimoleague (=62 miles). Pipes and ball valve frozen. Thawed at Drimoleague on up journey.	
		„ 6	3 a.m. down and 8.15 a.m. up trains. Brake not worked between Cork and Baltimore on either up or down journeys. Pipes and ball valve frozen.	
		„ 6	5.22 a.m. train from Drimoleague to Bantry. Engine No. 11 delayed 15 minutes at Aughaville station. Brake blocks frozen, disconnected blocks.	
		March 18	8.50 a.m. from Skibb. Engine No. 13 delayed 20 minutes at Dunmanway. Piston rod packing of No. 5 carriage truck leaking. (Material defective.)	
		„ 20	9.45 a.m. train from Cork. Engine No. 10 delayed 3 minutes at Bandon. Piston rod packing of No. 202 parcel waggon leaking. (Material defective.)	
		June 21	10.45 a.m. train from Cork. Engine No. 11. Brake not worked from Bandon to Clonakilty (13 miles). Piston rod packing leaking. (Defective material.)	
		„ 21	6.50 p.m. up train from Clonakilty to Cork. Delayed 4 minutes between Ballinhassig and Waterfall. Piston rod packing leaking. Engine No. 11. (Material defective).	
Cork, Blackrock, and Passage.	- -	No failures reported.	—	Automatic Vacuum 32,555 miles.
Donegal - -	- - -	No failures reported.	—	Automatic Vacuum 43,536 miles.
Dublin, Wicklow, and Wexford.	- - -	No failures reported.	—	Automatic Vacuum Brake. 610,700 miles.
Dundalk, Newry, and Greenore.	- - -	No failures reported.	—	Automatic Vacuum Brake. Passenger trains, 18,172 Mixed trains, 9,134¾ Total 27,306¾

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Great Northern (Ireland).	- - -	No failures reported.	—	Automatic Vacuum Brake. 1,041,164 miles.
Great Southern and Western Railway, Ireland.	- - -	No failures reported.	—	Automatic Vacuum 1,109,975¼.
Londonderry and Lough Swilly.	- - -	No failures reported.	—	Automatic Vacuum 42,015 miles.
Midland Great Western Railway of Ireland.	Automatic Vacuum Brake. (60 engines fitted. *See* Return No. 1.)		1 and 2 Nil. 3. *Delay in the working of trains in consequence of defects in or improper action of the brakes.*	674,985 miles.
		Feb. 2	5.30 p.m. down passenger train. Delay of 30 minutes at Mullingar by brake blocks going on wheels of No. 64 third-class. Cause, failure of piston packing.	
		„ 27	1.55 p.m. down train delayed 8 minutes. Cavan branch. Cause, defective tube between engine No. 23 and tender.	
		„ 27	5.45 p.m. up train delayed 15 minutes. Cavan branch. Cause, defective tube between engine No. 23 and tender.	
		„ 27	6.55 p.m. down train delayed 6 minutes. Cavan branch Cause, defective tube between engine No. 23 and tender.	
		„ 27	No. 54 horse-box rolling ring twisted when cylinder was opened up in shops. No delay.	
Sligo, Leitrim, and Northern Counties.	- - -	No failures reported.	—	Smith's Vacuum Brake. 15,165 miles.
Tralee and Dingle -	- - -	No failures nor instance of delay.	—	Automatic Vacuum Brake. 30,531 miles.
Waterford and Central Ireland.	- - -	No failures reported.	—	Automatic Vacuum 44,301½ miles.
Waterford and Limerick	- - -	No failures reported.	—	Automatic Vacuum Brake. 325,490 miles.
West Carbery -	- - -	No failures reported.	—	Automatic Vacuum Brake. 9,975 miles.
West Clare - -	- - -	No failures reported.	—	Automatic Vacuum Brake. 56,027 miles.

No. 3.

RETURN for the Six Months ending on the 30th day of June 1894, of the number of miles run by Passenger Trains not fitted with CONTINUOUS BRAKES on Railways.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
ENGLAND AND WALES.		
Barry	Barry	37
Bishop's Castle	Bishop's Castle	10,164
Brecon and Merthyr Tydfil Junction	Nil.	—
Cambrian	Cambrian and Mid Wales Railways	Mixed passenger and goods trains - 81,591
Cheshire Lines Committee	Cheshire Lines	—
Colne Valley and Halstead	Colne Valley and Halstead	—
Corris	Nil.	—
East and West Junction	Nil.	—
Festiniog	Nil.	—
Furness	Nil.	—
Garstang and Knot End	Garstang and Knot End	9,368
Golden Valley	Golden Valley	—
Great Eastern	Great Eastern, proper, Great Northern and Great Eastern Joint, Midland and Great Eastern, East London, Great Eastern, &c.	6,368
Great Northern	Great Northern	2,206
Great Western	*Main and Branch lines and lines worked by the Great Western Railway Company.	704
Hull, Barnsley, and West Riding Junction Railway and Dock.	Hull, Barnsley, and West Riding Junction	—
Isle of Wight	Nil.	—
Isle of Wight Central	Isle of Wight Central and Freshwater, Yarmouth, and Newport.	10,123

* The trains were fitted with continuous brakes, but owing to failures at various times, and on various sections of the line trains were worked by hand brake for the total distance shown above.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Lancashire and Yorkshire	Nil.	—
Liskeard and Caradon	Nil.	—
London and North-Western	London and North-Western Railway, and lines over which that company's trains run.	—
London and South-Western	London and South-Western Railway and Branches.	437¼
London, Brighton, and South Coast	London, Brighton, and South Coast	1,043
London, Chatham, and Dover	London, Chatham, and Dover, and Dover and Deal.	192
Londonderry (Seaham and Sunderland)	Nil.	—
London, Tilbury, and Southend	Nil.	—
Manchester and Milford	Manchester and Milford	22,250
Manchester, Sheffield, and Lincolnshire.	Manchester, Sheffield, and Lincolnshire Sheffield and Midland Committee Oldham, Ashton, and Guide Bridge Committee. Macclesfield Committee	66½
Manchester, South Junction, and Altrincham.	Nil.	—
Maryport and Carlisle	Nil.	—
Mawddwy	Nil.	—
Mersey	Nil.	—
Metropolitan	Nil.	—
Metropolitan District	Metropolitan	—
Midland	Nil.	—
Midland and Great Northern (Eastern Section).	Nil.	—
Midland and South-Western Junction	Nil.	—
Neath and Brecon	Nil.	—
North-Eastern	North-Eastern	m. ch. Ordinary - 32 39 Special and Excursion - 16 29 Total - 48 68*
North London	Nil.	—
North Staffordshire	Nil.	—
North Wales Narrow Gauge	North Wales Narrow Gauge	15,178†

* The Company explain that this mileage is due in one case to a brake failure and in the others to the engines not being fitted with the vacuum brake.

† The Westinghouse continuous automatic brake is being fitted to the Company's stock, but is not yet in general use. The mileage given is as if no trains were thus fitted.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Pembroke and Tenby	Pembroke and Tenby	Mixed trains 4,902
Pontypridd, Caerphilly, and Newport	Nil.	—
Ravenglass and Eskdale	Ravenglass and Eskdale	Passenger trains 6,933 Mixed trains 2,415 Total 9,348
Rhondda and Swansea Bay	Nil.	—
Rhymney	Nil.	—
Severn and Wye and Severn Bridge	Nil.	—
Somerset Joint Committee	Nil.	—
South-Eastern	South-Eastern and its Branches	2,695
Southwold	Southwold	12,246
Taff Vale	Nil.	8½*
Talyllyn	Talyllyn	4,916
West Lancashire	Nil.	—
West Somerset Mineral	West Somerset Mineral	3,744
Wirral	Nil.	—
Wrexham, Mold, and Connah's Quay	Nil.	—
SCOTLAND.		
Caledonian	Caledonian	1,479
	Callander and Oban	69
	Cathcart	12
	Crieff and Comrie	12
	Lanarkshire and Ayrshire	67
	Port Patrick and Wigtownshire	53
		Total 1,692
Glasgow and South-Western	Glasgow and South-Western, and Portpatrick and Wigtownshire Railways.	193†
Great North of Scotland	Great North of Scotland	Passenger trains 43,543¾ Mixed trains 131,004½ Total 174,548¼

* Due to failure on March 17.

† Through failure of engines or brakes on journeys.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Highland	Highland	Mixed trains 208,599
North British	Nil.	—
Portpatrick and Wigtownshire Joint Committee.	Nil.	—
IRELAND.		
Ballycastle	Ballycastle	18,283
Belfast and County Down	Nil.	—
Belfast and Northern Counties	Belfast and Northern Counties, Derry Central, Draperstown, Limavady and Dungiven.	Mixed trains 17,472
Bessbrook and Newry	Bessbrook and Newry Tramway	11,598
Castlederg and Victoria Bridge	Nil.	—
Cavan, Leitrim, and Roscommon Light Railway and Tramway.	Nil.	—
Clogher Valley Tramway	Nil.	—
Cork and Macroom Direct	Nil.	—
Cork and Muskerry Light	Nil.	—
Cork, Bandon, and South Coast	Cork, Bandon, and South Coast	440
	Ilen Valley	115
	Bantry Extension	196
	Clonakilty Extension	9
	West Cork	75
	Baltimore Extension	32
		Total 867
Cork, Blackrock, and Passage	Nil.	—
Donegal	Donegal	12,702
Dublin, Wicklow, and Wexford	Nil.	—
Dundalk, Newry, and Greenore	Nil.	—
Great Northern (Ireland)	Nil.	—
Great Southern and Western	Nil.	—
Londonderry and Lough Swilly	Letterkenny	12,495
Midland Great Western	Nil.	—
Sligo, Leitrim, and Northern Counties	Sligo, Leitrim, and Northern Counties	Mixed trains 35,474

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.
Tralee and Dingle - - -	Nil.	—
Waterford and Central Ireland -	Waterford and Central Ireland, Kilkenny Junction and Central Ireland.	25,059½
Waterford and Limerick - -	Limerick and Kerry - - - Tuam and Claremorris - - - Southern - - - - - Rathkeale and Newcastle Junction - - Tralee and Fenit - - - -	11,341½
Waterford and Tramore - -	Waterford and Tramore - - -	20,895
Waterford, Dungarvan, and Lismore	Waterford, Dungarvan, and Lismore - - Fermoy and Lismore - - -	51,622
West Carbery - - - -	Nil.	—
West Clare - - - -	Nil.	—

APPENDIX.

London, Brighton, and South Coast Railway.

Statement of Cases in which Accidents have been Prevented by the use of the Westinghouse Continuous Automatic Air Brake during the six months ending the 30th June 1894.

Date.	Train.	Particulars.
1894.		
Jan. 1	11.43 a.m. Eastbourne to Hastings, and 2.27 p.m. Hastings to Eastbourne.	When working the first-named train the driver "W. Street" saw a pack of foxhounds on the line, between Stane Cross Junction and Pevensey—he at once applied the Westinghouse brake, by which means he was enabled to stop before running over any of them. (The train consisted of 12 vehicles.) Also when returning with the 2.27 p.m. train, he encountered foxhounds on the line, and had to apply the continuous brake to prevent killing them. (The train consisted of four vehicles.)
„ 3	11.30 a.m. Portsmouth to Brighton.	After passing Havant up distant signal, the driver "J. Smith" noticed a horse and cart crossing the line a short distance ahead; he immediately shut off steam and applied the Westinghouse brake, by which means he was enabled to bring the train to a standstill within a few yards of the obstruction, thus averting what might have been a serious accident. (Train consisted of 11 vehicles.)
Feb. 13	11.27 a.m. Eastbourne to Brighton.	When approaching Berwick, the driver "C. Mann" had to apply the Westinghouse brake to avoid running over some hounds which suddenly ran on the line about 100 yards in front of his engine. (Train consisted of 7 vehicles.)
„ 14	12.6 p.m. London to Hastings.	When running through Offham cutting, there was a pack of staghounds on the line, and in order to prevent killing any the driver "G. Nye" had to apply the Westinghouse sharply, by which means he was enabled to stop the train in time. (The train consisted of eight vehicles.)
March 4	4.45 p.m. Victoria to London Bridge.	When running about 300 yards from Clapham Road, the driver "W. Perkins" noticed five or six boys lying on the ground with their heads on the rails. He sounded his whistle, but as they did not move, he shut off steam and applied the Westinghouse brake, by which means he was enabled to stop the train (which consisted of ten vehicles) about an engine's length from them. On seeing the train stop, they got up and ran away down the slope alongside the bridge.
„ 9	2.28 p.m. Battersea Park to London Bridge.	Just before entering Queen's Road Station, a man (a tramp) stepped in front of the engine, and although the whistle was sounded he took no notice, and he must have been killed had it not been for the Westinghouse brake which enabled the driver "M. Sadd" to bring the train to a stand, sharp at the commencement of the platform, the step of the brake just touching the man. (The train consisted of 11 vehicles.)
April 24	8.12 a.m. Polegate to Hastings.	When running between Bexhill and St. Leonards, and approaching the brickfield crossing, the driver "W. Miller" observed a horse and cart on the line, the man in charge being in the act of fastening the gate. "Miller" at once applied the Westinghouse brake, by which means he was enabled to avoid an accident.

LONDON BRIGHTON, AND SOUTH COAST RAILWAY—*continued.*

STATEMENT of CASES in which ACCIDENTS have been PREVENTED by the use of the WESTINGHOUSE CONTINUOUS AUTOMATIC AIR BRAKE during the six months ending the 30th June 1894—*cont.*

Date.	Train.	Particulars.
1894.		
May 8	6.46 a.m. London Bridge to Portsmouth Harbour.	Driver "D. Mackett" reports that as he neared Portcreek Bridge, he saw a number of soldiers crossing the bridge. He sounded the whistle, but they took no notice, and he therefore had to apply the Westinghouse brake sharply to avoid running over some of them. He adds their lives were saved through the Westinghouse brake.
June 17	7.26 a.m. London to Hastings.	When running between Pevensey and Bexhill, the driver "G. Sargent" saw two women and a boy driving some cows across the rails, and on getting nearer, he observed that one of the cows had a foot fast between the rails. By means of the Westinghouse brake "Sargent" was enabled to stop before reaching the animal, whose foot he succeeded in releasing. (The train consisted of 12 vehicles.)

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

STATEMENT showing the NUMBER of TIMES the WESTINGHOUSE CONTINUOUS AUTOMATIC AIR BRAKE has been used on this railway on two particular days during the six months ending 30th June 1894.

Tuesday, April 10th.

With passenger trains and empty carriages	15,696
With empty engines only	9,410
Total	25,106
Number of booked stoppages	9,563

The weather was fine.

Monday, June 11th.

With passenger trains and empty carriages	16,564
With empty engines only	10,263
Total	26,827
Number of booked stoppages	9,885

The weather was changeable.

2.—Rules and Regulations relating to Continuous Brakes.

CAMBRIAN RAILWAY.

Circular No. 206.

Instructions for Working the Vacuum Brake.

1. Certain of the carriages and vans at present working between Whitchurch and Aberystwith, and to a limited extent on other parts of the line also, are fitted with a Non-automatic Vacuum Brake, *under the control of the engine-driver only*. These vans are also fitted with an automatic arrangement, held off by a small vacuum to be constantly maintained in the train pipe when the engine has been coupled up. Should this vacuum not be maintained, the valve in the van will drop, the bell ring, and the van brake be instantly applied. The carriage examiners will be responsible for winding up the bell when the train is marshalled, and the guard for seeing it kept wound up on the journey.

2. The brake will eventually be fitted to all the Company's stock, but until then, some of the carriages will be fitted with train pipes only, and when it is necessary to run such carriages in Vacuum Brake trains, they must as far as possible be placed *behind carriages fitted with the brake and before the rear van.*

3. The person whose duty it is to couple up the brake pipes previous to the starting of a train, must as soon as the connexions are complete inform the driver, who will then raise the vacuum, by the use of the ejector. Porters and others are cautioned that in passing between vehicles they must not step upon the brake pipes.

4. Before giving the signal for the train to start, the guard must satisfy himself that the valve in his van has been raised by the vacuum, that the bell has ceased to ring, the small catch dropped out of gear, and that the gauge shows not less than 15 inches of vacuum. Should the gauge not show that amount of vacuum, the guard must hold up steadily the white flag to the driver, waving it when the necessary vacuum is reached. At night the same signals are to be given with a white light.

5. It will be the duty of the guard before starting, and at places where engines are changed, to inform the driver the number of vehicles on the train fitted with the Vacuum Brake complete, as well as the number fitted with the pipe only.

6. The brakes throughout the train being under the control of the driver, the use of the hand brake in the vans is not required for ordinary stops for which the use of the Vacuum Brake is permitted (*see* paragraph 14), but guards must at all times be prepared to apply the hand brake immediately on its being called for by the driver's whistle.

7. If at any time during a journey the Automatic Brake in the van goes on, and the bell rings, the guard must at once endeavour to ascertain the cause, which may arise from the train breaking in two, failure of some part of the brake apparatus, or neglect on the part of the driver to maintain the small vacuum. If the guard is satisfied that the application of the brake has not arisen from the train breaking loose, and can perceive nothing wrong with the train which would require it to be stopped, he must put the Automatic Brake out of gear by pulling up the spindle of the valve, and hooking in the catch, to prevent the brake blocks rubbing the wheels of the van to the next stopping place, where the guard must call the driver's attention to the matter.

8. The guards of all trains fitted with the Vacuum Brake must insert on their reports the words "Continuous Brake Train,' and if only for part of the journey, between what points, with full particulars of any defects which may occur in the working of the brake during the journey, including its automatic action under the circumstances described in paragraph 7.

9. To enable a van to be moved when the engine is detached from the train, the Automatic Brake can be held off by pulling up the spindle of the valve, and hooking in the catch. The valve must be so hooked up on coming to a stand at the end of a journey. The brake pipes of carriages standing in sidings must not be left hanging loose, but fixed to the plug.

10. The *Vacuum* Brake stock of the following Railway Companies may be placed with Cambrian Brake stock in making up Continuous Brake trains, subject to its being dealt with as provided in the second part of par. 12, viz.:—

London and North-Western.
North Stafford.
Great Northern.
Manchester, Sheffield, and Lincolnshire.
Manchester South Junction and Altrincham.
Cheshire Lines.
Caledonian.

The vehicles of any other company fitted with a Vacuum Brake must when possible be placed in the rear of Cambrian Continuous Brake trains, *and the pipes not coupled up*, but if it is absolutely necessary to marshal them in such trains, they are to be placed as far back as possible, the pipes left uncoupled, and the Vacuum Brake used only on the vehicles between them and the engine. If, however, such foreign vehicles are fitted with an apparatus for cutting off the brake cylinder from the train pipe, and the brake has been put out of gear, the pipes may be coupled up. Horse boxes and other vehicles *fitted with train pipes only* may be marshalled *in* the trains and the pipes coupled.

11. When any considerable number of vehicles not fitted with the Vacuum Brake, or having pipes only, are attached to a train fitted with such brake, the guard in the rear van must immediately, upon the Vacuum Brake being applied by the driver, apply his hand brake, and keep it tightly on, either until the train has come to a stand, or the driver has taken off the Vacuum Brake, and is again going forward. This action is necessary to prevent the rebound of the carriages which may occur with trains composed of vehicles only partially fitted with Continuous Brakes.

12. When a Cambrian carriage fitted with the brake is sent forward to the Great Western or Midland lines, the connexion between the train pipe and the brake cylinder must be cut off by means of the handle painted red, placed at each side of the carriage, close under the frame. This handle forms part of a rod extending across the carriage, and provided at each end with three notches. When it is desired to disconnect the brake, either for the purpose of sending the carriage to the lines mentioned, or if, when running, the brake is found defective, the handle must be pulled or pushed into one of the end notches. When right for working, the handle will stand in the centre notch, level with the side of the carriage frame, and examiners must see that the handle is placed in this position when carriages are returned from a foreign line, or after having undergone repairs.

Some of the London and North-Western Company's carriages are now fitted with the *Automatic* Vacuum Brake, and when Cambrian carriages are returned from that Company's line, special care must be taken that the handle is put back to the centre notch. For the same reason the connecting handle on London and North-Western carriages fitted with the Automatic arrangement must be moved to the position marked "Simple" before the carriages are placed in Cambrian Vacuum Brake trains.

13. Enginemen must be careful not to put on the Vacuum Brake too suddenly, and drivers of all down trains must test the brake before commencing the descent of Talerddig incline. Special instructions to enginemen will be issued by the Locomotive Superintendent.

14. The Vacuum Brake is *not to be used except on emergency* at—

(*a*) Terminal stations.
(*b*) Junctions between single and double line.
(*c*) Stations on single line where other trains are to be passed or crossed.
(*d*) *Nor at any station*, unless the driver is satisfied at the time of shutting off steam that there is an obstruction on the line which he could not stop short of by the use of the hand brakes.

Station-masters are to report any breach of this regulation which may come under their notice.

In all the foregoing cases steam must be shut off, and the speed reduced in the same manner as if the train were fitted with the ordinary hand brakes only.

Please acknowledge receipt on form annexed.

J. Conacher,
Secretary.

Oswestry, 15th June 1888.

THE FURNESS RAILWAYS.

Instructions to Engine Drivers, Guards, and Others, as to the use of the Automatic Vacuum Brake.

1. The brake can be applied throughout the train by the driver from the engine, or by the guard from his van, but in order that this may be done it is imperative that the flexible connexions between each carriage and between the engine and the train shall be properly coupled together, and the flexible pipe at the rear end be put carefully on the plug.

2. When the engine is attached to the train, it is the duty of the fireman to connect the hose coupling on the engine to that on the train; and when the engine is disconnected from the train it is the fireman's duty to place the hose coupling on to the plug provided for that purpose. The driver must see that the fireman attends to this.

3. The driver before starting must see that the gauge indicates at least 18 ins. of vacuum. This is done by admitting steam to the small ejector by means of a steam cock provided for that purpose. To apply the brake move the lever on the brake valve to "On." In ordinary running this lever must stand at "Off," or "Running position."

4. If from any cause the driver is unable to obtain at least 15 ins. of vacuum, he must inform the guard of the fact, and together they must work the train to destination with the ordinary hand brakes.

5. After the application of the automatic vacuum brake, and just before coming to a stand at stations or when stopped on the road, the driver must use his ejector so as to partially release the brake, and thus prevent any rebound of the carriages; this will also enable the driver to start his train immediately he receives the signal to do so.

6. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made on their reports. They must at all times be ready to apply the hand brake should the driver whistle for its assistance.

7. When guards have occasion to apply the brake they must press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and at once stops the train by the application of the brake blocks to the tyres of the wheels. This valve opens automatically when the brake is applied with full force by the driver, and ensures very quick action.

8. To release the brake for shunting purposes, the engine having left the train, first see that the hose coupling at one end of the train is off the plug, then pull the cord which is fixed under each carriage as indicated by a red arrow, then air will be admitted to the top side of the cylinder, and the brakes come off by gravity. The release cord must always be held by hand until the brakes come off and must never be fastened.

9. The guard, before giving the signal to start at the commencement of the journey, and at stations where the flexible pipes have been coupled or uncoupled, must inform the driver—1st, That all the vehicles throughout the train fitted with the brake have the flexible pipes properly coupled up, and the flexible pipe at the rear of the last vacuum vehicle is properly placed on the dummy plug; 2nd, that 18 ins. of vacuum is indicated by the gauge in rear van on the train; and the number of vehicles fitted with the vacuum brake, and in the event of their being any vehicles on the train not fitted with the vacuum brake, the guard must inform the driver of the fact, and the number of vehicles not fitted, so that the the driver may know what number of vehicles over which he has control, and what number are without the vacuum brake.

10. When carriages are to be slipped the flexible pipes must be fixed on the dummy plugs on the end of the carriage and the cord pulled to release the brake. The carriage after being slipped must be brought to a stand with the hand brake.

11. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the driver on his report, which must be accompanied by a special report giving full particulars of the irregularity. Should the amount of vacuum be less than 15 ins. on the gauge, the guard must call the driver's attention to the fact and enter the same on his report, stating cause, &c. Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever on the brake valve that is in the guard's van.

12. Vehicles fitted with pipes only, and which have no brake gear fitted to their own wheels, have the pipes on the ends painted red, and must be considered as vehicles without the brake.

13. To work with foreign stock, such as the London and North-Western, the handle painted red on the side of the carriage belonging to that Company must be pulled or put into one of the end notches, or into the position marked "Auto.," unless the brake is defective, when it should be put into the centre or "Cut off" position.

14. Vacuum pipe connections when not in use must be placed securely on the dummy plugs provided for that purpose.

15. To couple the hose pipes the porter must take one in each hand, lift them up sufficiently high to hook the bottom horns of the couplings together first, then by lowering them place the top horns of the couplings in the slots.

16. To uncouple the hose pipes, the porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate. Porters when coupling or uncoupling must have their hands quite free from cotton waste or anything else that would be likely to be drawn into the pipes by the suction of the vacuum.

17. In the formation or marshalling of trains when the whole of the coaches are not fitted with the

automatic vacuum brake, those that are so fitted must be placed together, and next to the engine.

18. Carriage washers must not allow any water to remain on the hose pipes or plugs when washing the vehicles, as any water left upon the pipes and plugs during frost the pipes and plugs would freeze, and cause delay and inconvenience in fixing the pipes on the plugs.

Instructions for Working the Automatic Vacuum Brake.

This brake can be applied throughout the train by the driver from his engine or by the guard from his van.

Drivers' Instructions.—Before starting see that your gauge indicates at least 18 ins. of vacuum. This is done by admitting steam to the small ejector by means of a steam cock placed for that purpose. To apply the brake, move the lever on the combination ejector to "On." In ordinary running the lever must stand at "Running position." To release the brake move the lever to position "Off. *When the vacuum is suddenly destroyed in the main pipe, the brake is full "On."* When separated from your train, see that the hose couplings are placed upon the plugs fixed for that purpose.

Guards' Instructions.—To apply the brake, press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is to be only used in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all the flexible hose-pipes between the carriages, and between the carriages and engine, are properly coupled together, and that the couplings on the end vehicles are placed upon the plugs. See by your gauge that a vacuum of 15 ins. is maintained. Report otherwise to the driver, and mark your report sheets accordingly, with cause, &c.

General Instructions.—To release the brakes for shunting purposes, the engine having left the train, first see that the hose coupling at one end of the train is taken off the plug, then pull the cord which is fixed under the body of each carriage, as shown by the arrows painted red. This admits air to the top side of the cylinder, and the brakes come off by gravity.

By Order,

General Offices, Barrow,
December 13th, 1890.

GREAT NORTHERN RAILWAY.

Vacuum Brakes.

Instructions for working the Vacuum Brake either as a Simple or Automatic Brake when the Carriages, &c. are fitted with the Combination Brake or the Automatic Brake only.

The attention of station masters, foremen, guards, porters and others is drawn to the arrangement under which carriages and other vehicles fitted with the simple or automatic apparatus can be used, either for the application of the simple or automatic brake, the arrangement consisting of a short lever at each end or side of the carriage or other vehicle, having a quadrant with the letters "Auto." at one end, and "Simp." at the other, indicating automatic or simple.

When carriages or other vehicles are attached to an automatic train, the lever must be turned to "Auto.," and when to a simple brake train to "Simp." When the brake is out of order the lever should be set straight up and down, cutting off the brake connections.

To release the brake from any carriage, &c., pull the cord, the position of which is indicated by a red star on each side of the vehicle. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine, or by the guard from his van, but in order that this may be done it is imperative that the flexible connections between each vehicle and between the engine and the train shall be properly coupled together, and the flexible pipe at the rear end be put carefully on the plug.

Special Instructions to Guards.

Guards must see that the gauge in their vans indicates 18 inches of vacuum before starting, and they must at all times be ready to apply the hand brake should the driver call by whistle for its assistance, or when approaching a stopping station.

When carriages are to be slipped the pipes must be put upon the plug, and the cord pulled to release the brake. The carriage, after being slipped, must be brought to a stand with the hand brake.

Special Instructions to Engine Drivers.

Before starting the driver must see that the gauge indicates at least 18 inches of vacuum, and that it be maintained during the journey. The vacuum is created by admitting steam to the small ejector. To release the brake close the application valve, when the brake-blocks will fall from the wheels.

When the automatic vacuum brake is to be used for the ordinary stoppage of trains, it must be done by the engineman opening the application valve on the engine gradually, not suddenly or with full force, except in cases of emergency.

At any station where there is likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the application valve on the engine so that there may be no delay in coupling or uncoupling.

General Instructions.

All passenger trains must be fitted with a continuous brake.

When a train, which ordinarily consists of vehicles fitted with a continuous brake, is not so fitted throughout, the front half, at least, must be fitted and worked with a continuous brake.

The working of these brakes by the engineman will not relieve guards from any responsibility. They must keep a good look-out, and be prepared to apply hand brakes should necessity arise.

Station-masters, inspectors, and foremen must select experienced men to couple together the pipes of vehicles fitted with any air brake, and must carefully examine the couplings before starting train. They must give special attention to the proper coupling of air brake pipes, and make such arrangements as will ensure these pipes being cared for, and not improperly used.

Guards *must see* that pipes of air brakes are properly coupled together *before starting*, and whenever any engine or vehicle is attached or detached; and they must, whenever the train stops at a station, examine the pipes and couplings.

In vehicles fitted with vacuum and also with Westinghouse brake pipes, the latter must, when such is practicable, be above the vacuum pipes.

The communication cord must be attached to lever of brake of engine. The cord must be given by platform porter to engineman or fireman, who must attach it to brake lever.

When vehicles fitted with continuous air brake are left in sidings or at stations, the brake pipes of each vehicle must be coupled together, and not left hanging loose. Porters and others are cautioned that in passing between vehicles *they must not step upon*

the brake pipes, nor interfere with or injure the connections.

Guards must report specially and also enter on their journals full particulars of any defect, failure, or unsatisfactory working of the brake of their train, or any portion of the fittings, couplings, &c., whether vacuum, Westinghouse, hand, or other brake.

The head guard of a train provided with a continuous brake must, before starting train, and at places where engines are changed, inform the engine driver the number of vehicles there are on the train, and upon how many of them the brake can be applied; and when any vehicles are attached or detached on journey, the engine driver must be advised, and told whether the attaching or detaching of such vehicles will interfere with working of brake on whole or a portion of train, and, if the latter, to what extent.

The engine driver of a train provided with a continuous brake must, before starting, and at places where engines are changed, ascertain from the head guard the number of vehicles there are on the train, and upon how many of them the brake can be applied, and, when any vehicles are attached or detached on journey, whether the attaching or detaching of such vehicles will interfere with working of brake, and, if so, to what extent.

Terminal stations must be approached cautiously, and guards must apply their hand brakes, should there be any reason to suppose the engineman has not the train well in hand, or that there is the least risk of not being able to stop at entrance to station. Guards must have their hands on their hand brakes when passing the distant signal of a terminal station, and must so remain and be ready to apply brakes until train is stopped at station.

Enginemen must test the brake before starting, at each station where engine is changed, and again at each station where any vehicle is attached or detached. They must satisfy themselves, before passing the distant-signal of any station at which the train has to stop or reduce speed, that the brake is in good working order, and on passing the distant-signal of any terminal station the brake must be applied and speed of train reduced by it. The train must not be allowed to travel between the distant-signal and any terminal station at a higher rate of speed than will admit of its being stopped at entrance to station by the application of the ordinary hand brakes only. Enginemen must from time to time, and whenever they are likely to have to make use of the brake, test its working, and must not at any time run more than 20 miles without trying the brake. They must not pass the distant-signal of any important station, such as Hat field, Hitchin, Peterboro', Retford, Doncaster, &c., nor go down any incline, without trying the brake, and must in each case satisfy themselves it is in good working order. Unless the brake is working properly when thus tried, the engineman must whistle for the guards' hand brakes, stop the train, and inform the guards the continuous brake is out of order, and the hand brakes must be relied upon for working the train. Special care must then be taken in approaching stations at which the train has to stop.

The brake must also be tested on—

All up trains when passing Holloway station (London),

All down trains when passing Meadow Lane junction (Nottingham),

All down trains when passing Hammerton Street junction (Bradford),

All down trains when passing the goods yard junction, Dewsbury,

All down trains when passing the junction with Midland Railway, Keighley,

All down trains when passing the down distant-signal of the Midland junction at Shipley.

A chain with hook is attached at each end of the several vehicles composing the coaching stock. This hook must be put round the rod of the screw coupling, immediately above the ball, to prevent the latter touching the brake pipes. Station masters, guards, and others must report any case of the suspended weight of a screw coupling being found above side chain or brake pipe.

Guards must inform enginemen of the number of carriages on their train which are not fitted with brake apparatus, but with through pipes only.

Vacuum brake pipe connections, when not in use, must be securely placed on the studs provided for the purpose.

Circular No. 5887a is cancelled.

P. Stirling,
Locomotive Engineer.
Francis P. Cockshott,
King's Cross, Superintendent of the Line.
31st December, 1887.

GREAT WESTERN RAILWAY.

Description of and Instructions for Working the Continuous Automatic Vacuum Brake, to commence 4th December 1893.

Description.

1. The Automatic Vacuum Brake stops the train by the application of the brake-blocks to the tyres, in the same way as the ordinary screw brake; but the levers which apply the blocks instead of being worked by a screw are worked by a cylinder and piston, actuated by atmospheric pressure.

2. The following are the principal parts of the apparatus on the carriages, the reference letters showing the corresponding parts on the diagrams given below :—*

A, continuous pipe, connected by flexible pipes between the carriages.

B, hollow piston rod, connected by branch pipe to the continuous pipe.

C, piston.

D, cylinder, capable of moving freely up and down on the fixed piston, and connected at the bottom with the brake levers E.

The piston is packed with an india-rubber ring, so arranged that air can pass freely from the bottom of the cylinder to the top, but not from the top to the bottom. The piston-rod is also packed with an india-rubber gland.

3. *Brake off.*—The air is exhausted from the pipes and cylinders, by the ejector on the engine when the train is at rest, or by the air-pump on the engine when the train is in motion. The gauges on the engine and in the guards' compartments indicate the power available for stopping the train, and should show not less than 20 inches nor more than 25 inches of vacuum *when the train is running*. The vacuum being equal on both sides of the piston, the cylinder falls by its own weight and holds the brakes off the wheels. (See Fig. 1.)

4. *Brake on.*—The moment air is admitted into the continuous pipe, whether by the engineman or by the guard, or by the accidental severance of the couplings, it rushes through the continuous pipe down the hollow piston-rod into the *upper* part of the cylinder, and pressing the india-rubber packing-ring against the sides of the cylinder, seals the vacuum on the under side of the piston, so that the pressure of air in the upper part of the cylinder, having nothing to balance it on the other side of the piston, thrusts up the cylinder and presses the brake blocks against the wheels. (See Fig. 2)

5. *Release of Brake.*—When the brake has been applied it will remain on, unless released either by the exhaustion of the air from the upper side of the piston (see par. 3) or by the admission of air to the under side of the piston.

For diagram, *see* [C.—3878.]

6. *Release Valves.*—The majority of vehicles are fitted with release valves for releasing the brake by hand, as shown at F on diagram. These valves can be opened by pulling the handle fixed on each side of the vehicles.

7. *Brake Setters.*—In order to apply the brakes on each carriage in the train as nearly as possible at the same moment, it is necessary to admit the air to the continuous pipe in more than one place. For this purpose a valve or brake setter is provided in each guard's compartment, so constructed that any sudden increase of pressure in the pipe instantly causes the valve to open automatically and admit a supply of air, after which it closes again by its own weight. By lifting the handle attached to the brake setter the guard can on an emergency apply the brakes on the entire train.

Formation of Passenger Trains.

8. *Vehicles to which Brake must be applicable.*—The Board of Trade Regulations with regard to continuous brakes on passenger trains require that the brake must be capable of being applied by both engineman and guard to every vehicle in the train, whether carrying passengers or not, subject to certain exceptions; but in order that this may be done, it is imperative that the flexible connections between each carriage, and between the engine and the train, be properly coupled up.

9. *Proportion of Vehicles which may be run unbraked.*—The exceptions referred to admit of a proportion of vehicles being run unbraked, provided they are fitted with continuous vacuum pipes. This proportion is one in four (*i.e.*, one unbraked to three braked vehicles) in every passenger train running a distance of 10 miles or under without a stop, and one in six (*i.e.*, one unbraked to five braked vehicles) if the train runs more than 10 miles without a stop.

10. *Piped Vehicles in front, unpiped Vehicles behind.*—In the formation of trains, vehicles fitted with the automatic vacuum brake, and those with the connecting pipe only, must be placed all together, and no vehicles unprovided with a connecting pipe must be placed between them and the engine; in other words those vehicles without pipes must all be placed behind those provided with pipes.

11. *Method of calculating weight on Train.*—The method of calculating the total number of vehicles upon a train, so as to determine how many of them are allowed to be run unbraked, is as under:—

Engine	to be counted as	2 vehicles
Tender	„	1 „
Tank engine	„	2 „
Eight-wheeled carriage	„	2 „
Six	„	1 „
Four	„	1 „
Horse-box, carriage truck, fish van, or other four-wheeled vehicle not carrying passengers	„	½ „

12. *One unpiped Vehicle may go behind Brake Van.*—The last vehicle must be fitted with the vacuum brake, excepting in the cases where, to avoid delay, it may be necessary to attach *one* unbraked vehicle, such as a cattle truck or a truck of fish, &c., behind the rear brake-van. This last occasional unbraked vehicle is not required to be furnished with a pipe, but it must be considered as included in and *not in addition to* the authorised proportion of unbraked vehicles, and must never carry passengers unless they are men in charge of horses or other live stock, and must always be secured to the train by the screw coupling of the rear brake-van.

13. *One unbraked Truck with a pipe may run in front of rear Brake on Passenger Train.*—An unbraked fish or fruit van, cattle waggon, goods or milk truck, may be run in a passenger train in front of the rear brake, provided it be furnished with a vacuum pipe, spring buffers, and screw couplings, without such train having to be run under the conditions affecting mixed trains referred to in page 11* of this circular. It must be borne in mind that any such vehicle must form one of the authorised proportion of unbraked vehicles, and must not be run in addition to that number.

14. *Kind of brake in use by each Company.*—The following table shows the description of continuous brake in use on the various railways:—

Automatic Vacuum Brake.	Westinghouse Brake.
Aylesbury and Buckingham.	Ayrshire and Wigtownshire.
Barry.	Caledonian.
Brecon and Merthyr.	Colne Valley and Halsted.
Cambrian.	East and West Junction.
Cheshire Lines.	Eastern and Midlands.
Furness.	*Glasgow and South-Western.
*Glasgow and South-Western.	Great Eastern.
Great Northern.	Great North of Scotland.
Great Western.	*Hull, Barnsley, and West Riding Junction.
Highland.	London, Brighton, and South Coast.
*Hull, Barnsley, and West Riding Junction.	London, Chatham, and Dover.
Lancashire and Yorkshire.	London, Tilbury, and Southend.
London and North-Western.	North British.
London and North-Western and Caledonian (West Coast Joint Stock).	North Eastern.
London and South-Western.	Rhymney.
Manchester and Milford.	West Lancashire.
Manchester, Sheffield, and Lincolnshire.	
Manchester and South Junction, and Altrincham.	
Maryport and Carlisle.	
Mersey.	
Midland.	
Midland and South-Western Junction.	
Neath and Brecon.	
North London.	
North Staffordshire.	
Rhondda and Swansea Bay.	
Somerset Joint Committee.	
South Eastern.	
Taff Vale.	*Note.—Have some of their stock fitted with Vacuum and some with the Westinghouse Brake.
Wirrall.	
Wrexham, Mold, and Connah's Quay.	

15. *Dual piped Vehicles.*—Some companies who do not use the vacuum-brake have fitted a limited number of their vehicles with vacuum pipes, and traffic from those companies intended to be sent through to the Great Western Railway will usually be found on arriving at the Junction to be loaded in such vehicles. If the traffic arrives in vehicles not fitted with a vacuum it *must be transferred* into properly fitted vehicles, except in the case of special trains which by arrangement are run through by the foreign company's engine. The foreign vehicle, if it be not braked, but only piped, must form one of the authorized proportion of unbraked vehicles, and not be run in addition to that number.

The London, Brighton, and South Coast, and the London, Chatham, and Dover Companies have some of their engines fitted with vacuum brake apparatus, so that they can take forward over those lines a Great Western train of vacuum fitted carriages.

The Great Western Company has fitted up a number of family and other carriages, horse-boxes, carriage trucks, fruit and poultry vans with the Westinghouse pipe, into which traffic for the companies using the Westinghouse brake must be loaded as far as practicable. All such vehicles, when empty, must be sent home to the stations marked upon the sole bar. If such a vehicle is not at hand, or if there is not time to procure one, the traffic must be loaded

* *See* page 88.

in ordinary Great Western vehicles, and a telegram sent to the transfer station on the foreign company's line on which the Westinghouse system applies. (See List).

16. *Scale to calculate how many unbraked Piped Vehicles may run on Train.*—The following scale shows what proportion of unbraked vehicles, fitted with continuous pipes, may be attached to a passenger train as provided in clauses 8 and 9:—

To trains running no more than 10 miles without a stop, unbraked vehicles, fitted with continuous pipes (or without a pipe in the case of the last vehicle shown in clause 12), may be attached in the proportions given in the following table:—

To a Train consisting of Braked Vehicles equal to—		Unbraked 8-wheel Carriages.	Unbraked 4 or 6-wheel Carriages.	Unbraked Horse Boxes, Carriage Trucks, or other Vehicles (not carrying Passengers other than men in charge of Stock).
	Plus engine and tender (3) = 4 may be attached	—	or 1	or 2
1½	" " = 4½ " "	—	" 1	" 3
2	" " = 5 " "	—	" 1	" 3
2½	" " = 5½ " "	—	" 1	" 3
3	" " = 6 " "	1	" 2	" 4
3½	" " = 6½ " "	1	" 2	" 4
4	" " = 7 " "	1	" 2	" 4
4½	" " = 7½ " "	1	" 2	" 5
5	" " = 8 " "	1	" 2	" 5
5½	" " = 8½ " "	1	" 2	" 5
6	" " = 9 " "	1	" 3	" 6
6½	" " = 9½ " "	1	" 3	" 6
7	" " = 10 " "	1	" 3	" 6
7½	" " = 10½ " "	1	" 3	" 7
8	" " = 11 " "	1	" 3	" 7
8½	" " = 11½ " "	1	" 3	" 7
9	" " = 12 " "	2	" 4	" 8
9½	" " = 12½ " "	2	" 4	" 8
10	" " = 13 " "	2	" 4	" 8
10½	" " = 13½ " "	2	" 4	" 8
11	" " = 14 " "	2	" 4	" 8
11½	" " = 14½ " "	2	" 4	" 8
12	" " = 15 " "	2	" 5	" 8
12½	" " = 15½ " "	2	" 5	" 7
13	" " = 16 " "	2	" 5	" 7
13½	" " = 16½ " "	2	" 5	" 6
14	" " = 17 " "	2	" 5	" 6
14½	" " = 17½ " "	2	" 5	" 5
15	" " = 18 " "	2	" 5	" 5
15½	" " = 18½ " "	2	" 4	" 4
16	" " = 19 " "	2	" 4	" 4
16½	" " = 19½ " "	1	" 3	" 3
17	" " = 20 " "	1	" 3	" 3
17½	" " = 20½ " "	1	" 2	" 2
18	" " = 21 " "	1	" 2	" 2
18½	" " = 21½ " "	—	" 1	" 1
19	" " = 22 " "	—	" 1	" 1
19½	" " = 22½ " "	—	" —	" —
20	" " = 23 " "	—	" —	" —

Scale to calculate how many unbraked Piped Vehicles may run in Train.—To trains running more than 10 miles without a stop, unbraked vehicles, fitted with continuous pipes (or without a pipe in the case of the last vehicle shown in clause 12), may be attached in the proportions given in the following table:—

To a Train consisting of Braked Vehicles equal to—		Unbraked 8 wheeled Carriages.	Unbraked 4 or 6 wheeled Carriages.	Unbraked Horse Boxes, Carriage, Trucks, or other Vehicles (not carrying Passengers other than Men in charge of Stock).
1	Plus engine and tender (3) = 4 may be attached	—	or —	or —
2	" " = 5 " "	—	" 1	2
2½	" " = 5½ " "	—	" 1	" 2
3	" " = 6 " "	—	" 1	" 2
3½	" " = 6½ " "	—	" 1	" 2
4	" " = 7 " "	—	" 1	" 2
4½	" " = 7½ " "	—	" 1	" 3
5	" " = 8 " "	—	" 1	" 3
5½	" " = 8½ " "	—	" 1	" 3
6	" " = 9 " "	—	" 1	" 3
6½	" " = 9½ " "	—	" 1	" 3
7	" " = 10 " "	1	" 2	" 4
7½	" " = 10½ " "	1	" 2	" 4
8	" " = 11 " "	1	" 2	" 4
8½	" " = 11½ " "	1	" 2	" 4
9	" " = 12 " "	1	" 2	" 4
9½	" " = 12½ " "	1	" 2	" 5
10	" " = 13 " "	1	" 2	" 5
10½	" " = 13½ " "	1	" 2	" 5
11	" " = 14 " "	1	" 2	" 5

To a Train consisting of Braked Vehicles equal to—		Unbraked 8 wheeled Carriages.	Unbraked 4 or 6 wheeled Carriages.	Unbraked Horse-Boxes, Carriage Trucks, or other Vehicles (not carrying Passengers other than Men in charge of Stock).
11½	Plus engine and tender (3) = 14½ may be attached	1	or 2	or 5
12	" " = 15 " "	1	" 3	" 6
12½	" " = 15½ " "	1	" 3	" 6
13	" " = 16 " "	1	" 3	" 6
13½	" " = 16½ " "	1	" 3	" 6
14	" " = 17 " "	1	" 3	" 6
14½	" " = 17½ " "	1	" 3	" 5
15	" " = 18 " "	1	" 3	" 5
15½	" " = 18½ " "	1	" 3	" 4
16	" " = 19 " "	1	" 3	" 4
16½	" " = 19½ " "	1	" 3	" 3
17	" " = 20 " "	1	" 3	" 3
17½	" " = 20½ " "	1	" 2	" 2
18	" " = 21 " "	1	" 2	" 2
18½	" " = 21½ " "	—	" 1	" 1
19	" " = 22 " "	—	" 1	" 1
19½	" " = 22½ " "	—	" —	" —
20	" " = 23 " "	—	" —	" —

N.B.—Only one unpiped Vehicle may go behind rear Brake.—Only one unbreaked vehicle—not two half vehicles—of whatever kind it may be, may be run behind the rear van, and such a vehicle is not required to be furnished with a pipe. It must, however, be regarded as one of the authorized number of unbraked vehicles in the train.

List of G.W.R. dual Piped Vehicles.—The vehicles already fitted with Westinghouse brake apparatus are as under:—

	Fitted with Pipe and Brake complete.	
	—	Located at
Family carriages	512–513	Paddington.
" "	509	Bristol.
Composite carriages	910–11	"
Invalid carriage	501	Paddington.
Horse boxes	705	Bristol.
"	706	Exeter.
"	701	Reading.
"	702	Worcester.
"	703	Hereford.
"	704	Swindon.
"	707	Plymouth.
"	708	Cardiff.
"	709	Oxford.
"	710	Wolverhampton.

	Fitted with Pipe only.	
	—	Located at
Carriage trucks	386–387	Bristol.
" "	388	Oxford.
Fruit van	47,883	Plymouth.
"	47,896	Worcester.
Poultry van	956	Penzance.
"	957	New Milford.

Fitted with Pipe only.

Horse Boxes.	Located at	Horse Boxes.	Located at
686–687	Bristol.	696–697	Newbury.
688–689	Gloucester.	685–692	Reading.
690–679	Oxford.	695–698	Hereford.
694	Exeter.	676–678	Swindon.
691	Plymouth.	680	Shrewsbury.
693–699	Cardiff.	681–677	Swansea.
700	Chippenham.	682	Wolverhampton.
711–715	New Milford.	683	Truro.
716	Chipping Norton Junction.	684	Southall.
		712–720	Didcot.
717	Shifnal.	713	Hartlebury.
718–719	Birmingham.	714	Newton Abbot.

17. *How to connect L. & N.W. and G.W.R. Brake Vehicles.*—Other railway companies' vehicles fitted with the automatic vacuum brake may be coupled up and worked with G.W.R. stock. Such vehicles have a valve for releasing the brake by hand, which can be opened by means of a rod or wire at each side of the vehicle. London and North-Western carriages have a handle at each side; and when attached to G.W.R. vehicles should have the handle put to the left unless the brake is defective, when it should be put in the centre position.

Starting of Trains.

18. The man whose duty it is to connect the flexible pipes before the train commences its journey, and at stations where the formation of the train has been altered or added to, must inform the driver as soon as all the flexible pipes are connected, and on receiving this intimation the driver must use his ejector in order to create the vacuum, and be ready to start instantly the signal is given.

19. *Guard before giving signal to start must see that pipes are all coupled, and* 20 *inches showing on Van gauge.*—The rear guard, before giving to the front guard or to the driver, as the case may be, the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain—

1st. That all vehicles throughout the train fitted with the automatic vacuum brake, or pipe, have the flexible pipes properly coupled up:

2nd. That the flexible pipe at the rear of the last brake vehicle is properly placed upon the stop plug:

3rd. That at least 20 inches of vacuum is indicated by the gauge in the rear van on the train.

Signal to start means that all is in order.—If he find that all is right to proceed, the usual signal to start must be given, viz., whistle and green flag by day and whistle and green light by night, and the driver must regard that signal not only as an order to proceed but as an assurance that the continuous-brake apparatus is in proper order; that it is applicable to the whole of the vehicles on the train; and that there are at least 20 inches indicated by the gauge in the rear van of the train.

Driver to know how many unbraked vehicles are on Train.—In the event of there being any vehicles on the train not fitted with the vacuum brake, or fitted with the continuous pipe only, the driver must be informed verbally of the number before starting, and he must be kept informed in this respect at intermediate stations where the formation of the train is interfered with.

How signal to start is to be given.—Where there are two or more guards on the train, the signal to start in the manner indicated must be given by the rear guard to the front guard, and by the front guard to the driver. In like manner, if there are any vehicles to which the vacuum brake cannot be applied, that information must be given by the rear guard to the front guard as soon as the formation of the train is complete, and by the front guard to the driver before he gives the signal to start.

Trains running daily with formation unaltered.—The instructions given in this rule do not apply to trains made up entirely of vehicles fitted with a continuous brake, running daily with the formation unaltered and the brake complete. When, however, in such cases the formation is altered, or vehicles are attached or detached, the guard and the engine-driver must communicate with each other.

20. *Guard to see Hand Brake is screwed off.*—In the case of vehicles fitted with the combined hand and vacuum brake, the guard must see before starting that the hand brake is screwed "full off," and the handle secured by means of the chain provided for the purpose.

21. *Duty of Driver before starting.*—The driver, before starting, must be careful to see :—

1. That the vacuum pipe of his engine is properly coupled up to the leading vehicle of the train :
2. That at least 20 inches of vacuum is indicated by the gauge on the engine.

If he receives the signal to start without being informed that any vehicles are not fitted, he must accept that signal as an order to proceed, and as an assurance that the continuous-brake apparatus is in proper order ; that it is applicable to the whole of the vehicles so fitted on the train ; and that at least 20 inches is indicated by the gauge on the rear van of the train.

Hand Brake to be used if Vacuum is not in order.—If from any cause the engineman is unable to obtain at least 20 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand brakes.

Stopping of Trains.

22. *Guards not to apply Vacuum Brake.*—Guards must never apply the automatic vacuum brake unless it be necessary that they should do so *to avoid accident*, and whenever they do so a full report of the circumstances must be made on their journals. They must at all times be ready to apply the *hand brake* should the engineman call by whistle for assistance.

23. *Driver to open Air-Valve gradually.*—When the automatic vacuum brake is to be used for the ordinary stoppage of trains, it must be by the engineman opening the air valve on the engine, but it must be done gradually and never suddenly or with full force, except in cases of emergency.

24. *When Vacuum cannot be used Train to be controlled by Hand Brakes.* — When the automatic vacuum brake cannot be used the train must be controlled for ordinary stoppages by the hand-brake on the engine and the guards' hand brakes.

25. *Vacuum Brake to be tested before passing Distant Signal ; certain Stations to be entered using Hand Brakes only.*—In approaching terminal stations, stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, at which the train has to stop, enginemen must test the continuous brake before passing the distant-signal, and the speed of the train must be reduced by it ; and enginemen must always enter such stations (or a dead end bay at any station) at such a speed as to enable them to stop the train at the proper place by the application of the ordinary hand-brake only. The automatic vacuum brake or steam brake must only be used in cases of emergency, and guards must watch the speed of trains, and assist enginemen by the use of the hand-brake when necessary.

If Vacuum is out of order Hand Brakes must be relied on.—Unless the continuous brake is working properly when thus tried, the engine-driver must whistle for the guard's hand-brake, and inform the guard, as early as practicable, that the continuous brake is out of order, and the hand-brake must then be relied upon for working the train. Special care must then be taken in approaching stations at which the train has to stop.

26. *Driver to use his Ejector before he stops after applying Vacuum Brake.*—Just before coming to a stand, after the application of the automatic vacuum brake at stations, or when stopped on the road, the engineman must use his ejector so as to partially release the continuous brake. This will prevent any rebound of the carriages, and will also enable the engineman to start his train immediately on receipt of the signal to do so. The fireman must keep his hand-brake on until on the point of starting the train.

27. *Guard to apply Hand Brake if Train separates.—In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.*

Slip Coaches.

28. *Slip guard's duties before starting.—Before starting, the slip guard must see :—*

1st.—That the flexible pipe couplings and the slip cock are properly connected, and that the chain attached to the cock is securely looped up to the swan neck pipe of the coach in front of his slip.

2nd.—That both the handle of the cock in the coupling, and the handle of the cock in his compartment are turned towards the left hand side of the train.

3rd.—That 20 inches at least is indicated by the gauge in the slip compartment.

29. *To use Hand Brake if less than 20 inches.*—If 20 inches cannot be obtained by the engine, the vacuum brake *must not be worked*, but the slip must depend entirely on the hand brakes.

30. *How to slip.*—The two cock handles must on no account be touched until just before the guard wishes to slip. He must then first pull the handle of the cock in the hose coupling towards the rear of his train, and then pull the handle of the cock inside his compartment to the "*Brake off*" position ; until he has done this he will be unable to move the slip lever.

31. *Disconnect Hose Pipe before slipping.—After both* handles have been pulled over, as described in the foregoing paragraph, and immediately before slipping, the guard must raise the slip cock sufficiently to disconnect it from the hose pipe attached to the slip carriage.

32. *How to apply Brake after slipping.*—Immediately after slipping the guard must apply the hand brake on the slipped portion, and when speed is reduced sufficiently, take it off and allow the slip carriage to run to the station platform. The vacuum brake can be applied by pushing the handle to the "*Brake on*" position, but this should only be done in case of emergency.

33. *Guard only to apply vacuum to avoid accident.*—Before slipping, the guard can apply the brake throughout the whole of the main train by lifting the handle of the brake setter in his compartment, but this must only be done *in order to avoid accident.*

34. *Guard to lock up Brake Handle after slip has stopped.*—Immediately after the slip portion of the train has come to a stand after slipping, the guard must close and lock the cover of the case containing the brake handle, and must keep it locked until it is again required for use.

35. If a driver, after the slip portion has been separated from the train, should find it necessary from

any cause to stop, he must take care not to do so until his train has passed the platform, so as to avoid the slip portion colliding with his train.

General Instructions.

36. *Vacuum not to be used when running through Slip Stations after Slipping.*—In running through slip stations after a slip carriage has been detached, the vacuum brake on the main train must not be used except in cases of emergency. If it is necessary to control the speed of the train, the hand-brake must be employed, and in any case the greatest caution should be used to prevent the slip carriage overtaking the train.

37. *Vacuum to be used down inclines.* — In descending inclines, the engineman must, when necessary to reduce the speed, use the automatic vacuum brake in preference to the hand-brakes.

38. *Air-valve to be opened before attaching or detaching.*—At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air valve on the engine, so that there may be no delay in coupling or uncoupling.

39. *Lubricate by blacklead, not by grease.*—As india-rubber is dissolved by oil or grease, it is most important that nothing of a greasy nature should be applied to, or allowed to reach the piston or piston rod. The only lubrication which is required is a little pure blacklead, which must be placed inside each cylinder by the persons appointed for the purpose. The other part of the brake must be cleaned and oiled by the examiners in the usual way.

40. *Failures to be reported by Driver and Guard.*—If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his train-bill, which must be accompanied by a special report giving full particulars of the irregularity.

41. *Lever of Brake Setter to be free.*—Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever of the brake setter.

42. *Hose couplings to be placed on Plug Stops when detached.*—When the flexible pipes between the engine and train are disconnected, the couplings must be placed on the plug stops provided for the purpose. Detached carriages must always have the flexible pipe couplings placed on the plug stops.

43. *Flexible pipes must not be stepped on.*—Porters and others are cautioned that they must not pass between the vehicles over the flexible pipes while a train is standing at a platform.

44. *Front Driver to use Vacuum Brake.*—When more than one engine is working a train, the leading engineman must control the brakes for ordinary stoppages.

Mixed Trains.

45. The regulations issued by the Board of Trade limit the number of trains which may carry both passengers and goods waggons, and lay down conditions under which such trains may be run. These conditions are as under:—

(*a.*) *Passenger Vehicles must be in front of Goods Vehicles, and Brake applied from Engine.*—The vehicles conveying passengers must be formed in front of all goods waggons. The vacuum brake must be capable of being applied to all such passenger vehicles from the engine, and there must be a hand brake vehicle in the rear of all, with a guard in it. There is no obligation to apply the continuous brake from the guards' van or compartment, and although it will be generally convenient for the passenger brake to be formed next to the coaches, it may, if necessary, be placed in the rear of the waggons, in which case the guard must ride in it.

One Guard for 10 *Vehicles. Passengers not to ride in Brake Carriage if behind Waggons.*—When the train does not consist of more than 10 vehicles, only one guard is required, and he must ride in the brake at the rear of the train, and if the passenger brake is a brake-carriage, passengers must not be allowed to ride in it when it is placed behind the waggons.

Carriages to go into Siding if there is more than one shunt.—At intermediate stations if the goods work entails more than one shunt, the passenger carriages must, if practicable, be placed in a siding and secured, before the shunting is commenced.

(*b.*) *Two Guards and two Brakes if more than* 10 *Vehicles; three if more than* 20; *maximum* 25; *last Brake with Guard in it to be at rear.*—When the total number of vehicles exceeds 10 there must be a second guard and a second brake on the train; and when the total number exceeds 20, there must be three guards and three brakes. No "mixed" train may have more than 25 vehicles. The passenger brake must be placed in the rear of the coaches, and the other brakes at suitable intervals of distance amongst the waggons, the last brake being at the rear of all the other vehicles, with a guard in it. Each vehicle is to count as one, and not on the basis shown for passenger trains. The engine and tender are not to be counted.

(*c.*) *Average speed between Stations* 25 *miles an hour, not to run over* 10 *miles without stopping.*—The average speed of a mixed train between any two stopping places must not exceed 25 miles an hour; and all such trains must be timed to stop at stations at intervals not exceeding 10 miles.

(*d.*) *Passengers on combined Stock and Passenger Trains to be in front of waggons. Drovers and Grooms with Stock not considered Passengers.*—When trains are run for the conveyance of horses, cattle, or other stock, and vehicles are added for the conveyance of passengers, the vehicles containing the passengers must be placed in front of all goods waggons; and the train must be run subject to the conditions applying to mixed trains. Drovers, grooms, or other persons travelling in charge of the stock are not, however, to be considered as passengers. Such mixed trains must only be run on sections of the line on which the Board of Trade have sanctioned the running of mixed trains.

46. *Authorised mixed Trains marked "mixed" in Service Book.*—The only passenger trains authorised to be used as "mixed" trains for the conveyance of traffic in goods waggons are headed "mixed" in the service time tables, and station masters and others in charge of stations are held responsible for seeing that no other passenger train is used for such traffic beyond the one unbraked vehicle allowed to be placed at the rear of a passenger train, as provided in clause 12 of this circular.

Hand-Brake Power on Passenger Trains.

47. *Persons in charge of Stations to see that Trains have enough Hand-Brake Power.*—Station masters, inspectors, or others in charge of stations at which trains commence their journey, will be responsible for seeing that all trains made up at or starting from their stations are provided with sufficient hand-brake power, and the same responsibility will attach to persons in charge, adding vehicles to the trains at intermediate stations.

48. *As a Rule two Brakes to be on each Train.*—As a general rule, passenger trains should be formed with a brake van in front, and a brake van or a carriage fitted with a hand-brake at the rear.

49. *Where Guards are to ride.*— The guard in charge of the train must in all cases ride in the rear brake, except in the case of certain trains which by working into a station and out again, become reversed on the latter portion of the journey; and when there are two guards, the under guard must ride in the front brake, except as shown in the exceptions given in this clause.

50. *Number of Vehicles allowed behind rear Brake.*—*On easy gradients not steeper than* 1 *in* 200.—Four vehicles containing passengers may, if necessary, be worked behind the rear brake-van, but when passengers are so conveyed, and horse-boxes or carriage trucks have also to be forwarded, the total number of vehicles of any sort behind the rear brake-van must not exceed six.

On gradients steeper than 1 *in* 200.—One passenger carriage may, if necessary, be worked behind the rear brake-van, but the total number of vehicles of any sort behind the rear brake-van must not exceed four in any case.

51. *Relative number of Brakes and Guards to Vehicles on Train.*—Trains must be provided with guards according to the work which has to be done, but the minimum number of guards and hand-brakes must be as under :—

From 1 vehicle to 10 vehicles, 1 brake and 1 guard.

From 11 vehicles to 20 vehicles, 2 brakes and 2 guards.

† From 16 vehicles to 20 vehicles (on gradients deeper than 1 in 200) 3 brakes and 2 guards, (1 near middle of train).

* Over 20 vehicles, 3 brakes and 3 guards (1 near middle of train).

52. *Relative weights of 8-wheel, 6-wheel, and 4-wheel Vehicles.*—The limitations given above apply to 4-wheel or 6-wheel vehicles. Two 8-wheel vehicles must be reckoned as being equal to three 6-wheel or four 4-wheel vehicles.

53. *Guards to see that Hand-Brake is in good order.*—Guards when taking charge of their vans must test the hand-brake, and see that it is in all respects clean, well oiled, and fit for instant use.

These instructions cancel all previously issued on this subject, including Circulars 866 *and* 1821, *issued by the Superintendent of the line, relative to the Railway Regulation Act, and brake power on passenger trains.*

N. J. Burlinson,
Superintendent of the Line.

W. Dean,
Chief Locomotive Superintendent and Engineer.

November 1893.

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* As a general rule no passenger train should be formed of more than 20 vehicles, excluding the engine and tender.

† In such cases the front guard must ride in the middle brake.

LANCASHIRE AND YORKSHIRE RAILWAY.

Instructions to Engine Drivers and Guards respecting the Automatic Vacuum Brake under the Control of the Driver.

1. The brake can be applied throughout the train by the driver from the engine, or by the guard from the van. The amount of brake power at command depends on the amount of vacuum obtained.

2. It is the duty of the fireman, when the engine is attached to the train, to connect the hose coupling on the engine to that on the train; and when the engine is separated from the train, to place the hose coupling of the engine on to the plug provided for the purpose. The driver must see that the fireman attends to this.

3. Before starting, the driver must see that the gauge indicates at least 18 inches of vacuum. This is done by admitting steam to the small ejector by means of the steam cock provided for that purpose. To apply the brake, move the lever on the brake valve to "*On.*" In ordinary running this lever must stand at "*Off*," or "Running Position."

4. Previous to engines or vehicles being attached or detached the vacuum in the train pipe must be destroyed by opening the application valve, so that there may be no delay in coupling and uncoupling, and to avoid damage to the couplings. After the train has again been made up, and before it is started, the release wire under the body of each vehicle must be pulled.

5. To couple the hose pipes, the fireman, shunter, or porter must take one in each hand and lift them sufficiently high to hook the bottom horns of the coupling together first, and then, by lowering them, place the top horns of couplings in the slots.

6. To uncouple the hose pipes, the fireman, shunter, or porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate.

7. Guards must record on the journals the amount of vacuum registered when starting with their train.

8. It is the duty of the shunter or porter to connect the hose couplings between the carriages, and to place the hose coupling in the rear of the last vehicle on to the plug provided for that purpose. The guard must see that this has been properly attended to.

9. To release the brakes (the engine having left the train), first see that the hose coupling at one end of the train is off the plug; then pull the wire fixed under the body of each carriage as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes fall off by gravity.

10. A chain with hook is attached to each end of the several vehicles composing the coaching stock. The shunter must put this hook round the rod of the screw coupling immediately above the ball, to prevent the latter touching the brake pipes.

11. *The guard is not to make use of the brake except in cases of emergency.*

12. When the guard has occasion to apply the brake, he must press down the lever on the valve placed in his van. This admits air throughout the train pipe. This valve in the van opens automatically when the brake is applied violently by the driver, and ensures rapid action; it should, however, only be so applied in cases of emergency. The guard must see by the gauge that a vacuum of at least 18 inches is maintained, or report otherwise to the driver.

13. In case of a break-loose the guard in the rear van must put the hand brake hard on, and place the strap on the wheel, before going back to protect his train. When a train or any portion of the same is detached, the vacuum brake must not be depended upon, but the hand brake must be used where there is one available; in other cases scotches must be utilised, so as to prevent the vehicles moving after the vacuum has been exhausted.

14. In order that engine drivers, before starting from stations with trains fitted with the automatic brake, may know when the brake connections are complete, the man whose duty it is to couple up the hose pipes must, as soon as the work is done, inform the guard that all is ready for the vacuum to be created. The driver must not open the ejector until the guard, by exhibiting steadily a white hand signal, indicates that he may do so.

15. Before giving the signal for a train to start, the rear guard must satisfy himself that the vacuum gauge in his van shows not less than 18 inches of vacuum. If the gauge does not show the proper amount of vacuum, the guard must hold up steadily a white flag or hand lamp towards the driver, and continue to exhibit it until the necessary vacuum is reached.

16. Engine drivers must test the continuous brake before passing the distant-signal of any terminal or junction station at which the train has to stop Should the brake not be working properly when thus

tried, the driver must whistle for the guard's hand brake, and inform the guard that the continuous brake is out of order, and that the hand brake must be relied upon for working the train.

Engine drivers are prohibited from using the automatic brake after passing the end of the platform at which they have to stop when approaching terminal and the following junction stations: Blackburn, Bolton, Manchester, Preston, Wakefield, York, and when entering all bay sidings. The train must be brought to a stand in its proper position by the use of the hand brake alone. The guard will be held responsible for applying the hand brake in his van.

Should it be necessary through any emergency to apply the continuous brake after passing the end of the platform, both the driver and the guard must specially report the circumstances. *See* Special Order M 7938.

17. When backing an engine to a passenger train before coupling up, the fireman must stand by his hand brake.

18. In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake, the guard applying the manual brake for each stop.

19. Should the automatic vaccum brake altogether fail on a train fitted with a manual brake on the van at each end of the train, the driver must advise the guard, who must then work the rear brake if there is only one guard with the train; and if the train consists of more than six vehicles, and there is more than one brake-van on the train, the guard must obtain a porter to take charge of the extra van. These instructions will also apply in case of a non-vacuum engine being provided to work a train of vacuum stock

20. Guards must be careful that luggage, &c., is arranged in the vans so that nothing can rest against or in any way interfere with the application valve lever.

J. A. F. Aspinall, Chief Mechanical Engineer.
Chas. J. Nicholson, Superintendent.
Manchester, July 1891.

LONDON AND NORTH-WESTERN RAILWAY.

Continuous Brakes.

Instruction of Staff in use of Continuous Brakes.

Inspectors in the Carriage Department have been appointed to instruct the staff at the several stations, as well as the guards, in the manipulation of the brake and its fittings, in addition to which, at the following stations, there are men specially appointed to look after the vacuum brake apparatus, and any defect occurring in working must be pointed out to them by the guards and drivers immediately on arrival at any of those places:—

Euston,	London Road,
Broad Street,	Exchange,
Willesden,	Leeds,
Bletchley,	Chester,
Northampton,	Llandudno Junction,
Peterborough,	Bangor,
Rugby,	Holyhead,
Birmingham,	Bolton,
Walsall,	St. Helens,
Wolverhampton,	Wigan,
Dudley,	Preston,
Derby,	Windermere,
Nuneaton,	Carlisle,
Stafford,	Shrewsbury,
Crewe,	Craven Arms,
Liverpool,	Abergavenny Junction,
Stockport,	Swansea.
Longsight,	

Should it be necessary at any time to send brakesmen or porters in charge of the trains in lieu of the ordinary guards, care must be taken to ascertain that they understand the instructions for working the continuous brake, which will be found posted up in each of the vans.

Vacuum Brake on West Coast Joint Stock, London and North-Western Railway, and Caledonian Railway Brake Vans.

On arrival at Carlisle of the through West Coast trains, the London and North-Western Company's fireman must leave the vacuum pipe off the stopper when he uncouples his engine from the train. This will enable the stored-up power reserved in each vehicle to be properly destroyed. The Caledonian fireman will put the vacuum pipe on the stopper when he couples his engine on to the train.

Working of the Vacuum Brake during Frost.

Notice to Locomotive Foremen and Enginemen.

In order to prevent the accumulation of ice in the pipes of the vacuum brake apparatus on engines and carriages during frosty weather, enginemen are hereby instructed that before leaving the shed to work a train they must remove the tail pipe from the stopper at the back of the tender, or both on tank engines, and give a good blow through with the large ejector. This must also be done before leaving their engines on the shed when finishing work.

Before starting with a train, and also at the principal stations at which the train is timed to stop, they must give the pipes a good blow through with the large ejector while the tail pipe of the rear vehicle of the train is off the stopper, so as to clear out any moisture that may have formed in the pipes.

A man will be appointed, belonging to the Locomotive Department, to remove and replace the tail pipe, and enginemen, on arrival at a station where the pipes are to be blown through, must look out for the person told off for this duty, who, after removing the tail pipe, will signal to the driver when to blow up, and who will replace the pipe on the stopper after the pipes have been cleared by the large ejector.

The locomotive foreman of each district must use his own discretion when to appoint men for this duty, being guided by the severity or otherwise of the frost. He must also, at his discretion, arrange for the vacuum-brake pipes between the engine and tender to be uncoupled while the engines are standing in the shed.

To Brake Attendants, Carriage Couplers, Guards, &c.

Instructions for Working the Automatic Vacuum Brake.

Description.

1. The automatic brake is continuous throughout the whole length of the train—each vehicle carrying its own reservoir and cylinder, which are connected by a branch pipe to the main train pipe. Should a train fitted with this brake become divided when running, the hose-pipes will become detached, and the brake will go on throughout each portion of the train.

2. The brake power available depends upon the amount of vacuum maintained by the driver. It is therefore necessary that at least 18, and not more than 20 inches of vacuum be maintained in the rear van whilst the train is in motion.

3. There are two gauges in the van, one showing the amount of vacuum in the train pipe, and the other the amount of vacuum in the reservoir of the brake-van.

4. The brake is applied by the driver admitting air into the main train pipe, or by the guard opening the valve on the iron stand-pipe fixed near his seat. The guard must only apply the vacuum brake in cases of emergency. The valve must be kept open until the needle of the train-pipe gauge goes back to zero.

5. When a sudden application of the brake is made, the valve in each guard's van will open automatically, thereby admitting air into the main train pipe, and thus ensuring a rapid application of the brake. The brake is released by the driver re-creating the vacuum throughout the whole train.

Arrangements for Cutting-off Brakes.

6. On all vehicles there is a quadrant and lever on each side of the sole-bar.

(On some of the carriages the word "simple," appears instead of "release," but this will gradually be made uniform with the description above named.)

The brake can be released on the different kinds of vehicles (the hose-pipe being first taken off the stopper at one end of the train or vehicle), as follows :—

1st. By moving the lever from "auto" to "simple," or by pulling the wire which will be found close to the lever.

2nd. By moving the lever from "auto" to "release" or "cut off."

The hose-pipe in each case must be off the stopper at one end of the train or vehicle.

When the brake gear on any vehicle is out of order, from leakage or any other cause, the lever on the sole-bar must be moved into the "cut-off" position, but care must be taken that the brake is properly released before doing so. This will prevent the brake gear from working on that vehicle, but will not interfere with the brake on the remainder of the train.

Starting.

7. In order that engine-drivers, before starting from stations with trains fitted with the automatic brake, may know when the brake connexions are complete, the man whose duty it is to couple up the hose-pipe must, as soon as the work is done, go to the guard and tell him all is ready for the vacuum to be created. The driver must not open the ejector until the guard, by exhibiting steadily a white flag by day and a white light by night, indicates that he may do so.

8. Before giving the signal for a train to start, the *rear* guard must satisfy himself that both the gauges in his van indicate at least 18 and not more than 20 inches of vacuum, and that both gauges indicate the same amount of vacuum. *It will also be his duty, at all places where there are no carriage-brake examiners in attendance, to see that the quadrant handles on the sole-bars of the carriages are in the "auto" position.*

If the gauges do not show the proper amount of vacuum, the guard must hold up steadily a white hand signal towards the driver, and continue to exhibit it until the necessary vacuum is created.

When the gauges show that the proper amount of vacuum has been created, the brake must be tested by the guard applying it from the rear van.

The driver will recreate the vacuum, and no further brake signal will be given.

9. This test must always be made by the guard before starting the train from the station at which it was made up, or from any place at which the continuity of the brake has been interfered with by engines or vehicles being attached or detached.

10. Where two engines are attached to a train, the hose-couplings between the engines must be connected, nd the driver of the leading engine will be held responsible for the working of the brake.

During Journey.

11. Guards must see that during the journey nothing is placed so as to interfere with the lever of the emergency-valve in the brake-vans.

12. If, during the journey, the guard should notice anything wrong with the brake apparatus, or should either of the vacuum gauges show less than 18 inches, he must call the driver's attention by pulling the communication cord and showing to the driver a green flag or hand lamp. This will signify to the driver that the vacuum brake must not be relied upon for pulling up the train at the next stopping station, and the guard must be prepared to assist the driver with his hand brake. In the case of trains not fitted with communication cord, the guard must apply his hand brake, when approaching the next stopping place, in sufficient time to bring the train to a stand at the platform without the aid of the vacuum brake, and must advise the driver of the state of the gauges in his van before proceeding.

13. Any irregularity or special circumstances in connexion with the working of the brake, or defect in its action, must be reported by the guard in charge to the superintendent of the line, as well as on his journal. The Carriage Department staff must be advised of the irregularity by both the guard and driver at the next stopping station. Guards must record in their books occasionally during the journey the amount of vacuum registered on the gauges. Should this at any time exceed 20 inches, the circumstance must be recorded by the guard on the engineman's ticket, the amount of vacuum maintained being tated.

14. The continuous brakes throughout the train being under the control of the driver, the use of the hand brake in the vans is not required for ordinary stops, but guards must apply the hand brake immediately on its being called for by the driver's whistle, *and must in all cases use their hand brakes to assist in stopping trains on approaching terminal stations, bay sidings, or principal stations, and must not rely on the driver's pulling up trains by means of the vacuum brake.*

15. In case of a break-loose, the guard in the rear van must put the hand brake hard on, and place the chain on the wheel before going back to protect his train.

Shunting.

16. When vehicles have to be moved after the engine is detached, it must first be seen that the hose-pipe at one end is off the stopper. The brake must be released as shown in paragraph 6. *Care must be taken by the person in charge of the shunting to see that the lever on the sole-bar is returned to the "auto" position after the brake has been released.*

17. It is the duty of the fireman, when the engine is attached to the train, to connect the hose-coupling on the engine to that on the train ; and it is his duty, when the engine is detached from the train, to place the hose-coupling of the front carriage on to the stopper provided for the purpose.

Instructions in Cases of Difficulty in Working the Automatic Brake.

18. If the driver is, from any cause, unable to work the automatic brake, *the brake must be cut off, and the train worked by the hand brakes only,* the speed being so regulated as to enable the driver to have full control of the train by use of the hand-brakes only.

In all such cases guards must be on the alert and assist in stopping the train with their van brakes.

Foreign companies' vehicles not fitted with the automatic vacuum brake, nor with the through vacuum pipes, must be placed in rear of trains in which the automatic brake is in use.

G. Findlay,
General Manager.

Euston Station,
April 1892.

LONDON AND SOUTH-WESTERN RAILWAY.

Instructions to Enginemen, Guards, Carriage Examiners, and all others concerned, as to the use of the Continuous Automatic Vacuum Brake.

Description.

1. The automatic vacuum brake stops the train by the application of the brake blocks to the tyres of the carriages in the same way as the ordinary screw brake, but the levers which apply the blocks, instead of being worked by a screw, are worked by a piston actuated by atmospheric pressure in a cylinder.

2. The following are the principal parts of the apparatus on the carriages :—

The cylinder.
„ piston or diaphragm.
„ ball valve.
„ main train pipe.
„ flexible branch pipe, connecting bottom of cylinder to train pipe.
„ vacuum chamber, connected to top of cylinder.
„ miniature sack, to prevent the admission of air to the bottom of piston.
„ release lever or ball valve, connected to each side of carriage underframe by wire cord.
„ dummy.
„ "Universal" hose and coupling.

3. By means of the ejector placed upon the engine the air is drawn out of the main train pipe, and from the top and bottom sides of the piston or diaphragm in the cylinder through the flexible branch pipe and through the ball valve from the vacuum chamber, so that in running a vacuum should be maintained throughout the system of 20 inches, and certainly not less than 15 inches.

4. *Brake on.*—The brake is operated either by the brake valve on the engine in connexion with the main train pipe or by the guard pressing downwards the lever of the van valve, which is likewise connected with the main train pipe. The effect of this is to admit air to the train pipe, and thence through the flexible branch pipe to the bottom side of piston, thereby applying the brakes, the top side and vacuum chamber maintaining the vacuum through the action of the ball valve, which closes immediately air is admitted to the train pipe.

On a full application of the brake—from whatever cause—all the van valves in the train will open automatically and admit air through each van valve simultaneously, thus obtaining a more rapid application of the brake.

5. In the event of a train parting, the "Universal" hose and couplings will, without damage, become detached, and the brakes will immediately apply themselves.

6. *Brake off.*—In order to release the brakes the driver must move the lever of brake valve on the engine to the position marked "off," when the ejector will at once re-create the vacuum throughout the system as before described, thus allowing the piston to fall by its own weight and thereby release the brakes.

7. To release the brakes on any carriages that require to be shunted, in the event of the engine not having done so before being detached from the train, the ball valve must be opened on those carriages by means of a small wire cord which is placed on either side of the carriage underframe. This admits air to the vacuum chamber and top side of piston, thus restoring equilibrium on both sides of piston, under which conditions the brakes fall off by their own weight.

8. A dummy is provided to which the rear coupling must always be attached.

Instructions for working.

9. In the formation of trains, the coaches fitted with the automatic vacuum brake must be placed together next to the engine, so that the automatic vacuum brake may be used.

10. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine or by the guard from his van, as before described; but in order that this may be done, it is imperative that the flexible connexions between each carriage and between the engine and the train be properly coupled up; also that the flexible connexion on the last vehicle fitted with the brake be placed on the dummy provided for that purpose as described in clause 8.

11. The brake must be used for ordinary stops, but must not be applied with full force except in cases of emergency. For ordinary stops, and particularly when approaching junctions where timed to stop, enginemen must be careful to reduce the speed, so that a moderate application of the brake will suffice.

12. Guards must not apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full and special report of the circumstances must be made, and the occurrence must also be notified on their journals; they must at all times be ready to apply the hand brake should the driver call for assistance.

13. *In approaching terminal stations, or stations at which other trains may be standing on the same line of rails, the vacuum brake must not be used except in cases of emergency, but the speed of the train must be so reduced that it may be brought to a stand by means of the hand and steam brakes alone.*

14. In descending inclines the engineman must use the automatic vacuum brake in preference to the hand and steam brakes.

15. *In running through slip stations after a slip carriage has been detached, the vacuum brake must not be used excepting in cases of emergency. If it is necessary to control the speed of the train, the hand brake must be employed; in any case the greatest caution should be used to prevent the slip carriage overtaking the train.*

16. *Guards.*—The guard before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman—

(*a.*) That all the flexible pipes are properly coupled up continuously throughout the train, and that the flexible pipe of the last brake vehicle is properly placed upon the dummy.
(*b.*) The number of vehicles in the train fitted with the brake the flexible pipes of which are coupled up to the engine.
(*c.*) The number of inches of vacuum indicated by the gauge in the rear van.

17. *Enginemen.*—The engineman before starting at the commencement of the journey, and also at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain from the guard the number of vehicles in the train fitted with the brake the flexible pipes of which are coupled up to the engine, and the number of inches of vacuum shown by the gauge in the rear van.

He must also be careful to see—

(*a.*) That the vacuum pipe of his engine is properly coupled up to the leading vehicle in the train.
(*b.*) The number of inches of vacuum indicated by the gauge on the engine.

18. If from any cause the engineman is unable to obtain at least 15 inches of vacuum he must inform the guards of the fact, and the train must be worked forward with the ordinary hand and steam brakes, and he must report on his daily brake return when he is not able to obtain 20 inches.

19. When the pipes between the engine and train are disconnected, the couplings must be placed on the

dummies provided for that purpose. Detached carriages must always have the hose couplings placed on the dummies.

20. At any station where the driver is informed that vehicles are to be attached to or taken off the train, the vacuum in the main train pipe must be destroyed, as described in clause No. 7, so that there may be no delay in coupling or uncoupling.

21. In the case of vans fitted with the combined hand and vacuum brake, the guard must see before starting that the hand brake is screwed full "off" and the handle secured by means of the chain provided for the purpose.

22. It is necessary that the forms specially provided for the purpose should be made out daily by enginemen working automatic vacuum brake trains, and be left with the daily return each night, and if from any cause the brake is not used, or there is any irregularity in its working a remark must be made by the driver on the form to that effect, and also by the guard on his journal.

The guard must also make a *special* report of the occurrence.

23. When vehicles are supplied with connecting pipes only, they must be considered as vehicles without the brake, but the brake connexions must be made as described in clause 10.

24. When vehicles not fitted with a continuous brake or having connecting pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, *the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand brake, and keep it tightly on, either until the train has come to a stand or the driver has taken off his brake, and is again going forward, as the case may be.* This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars which may occur when a powerful brake is applied to the front portion of the train only.

W. Adams,
Locomotive and Carriage Superintendent.

E.W. Verrinder,
Traffic Superintendent.

London, November 1882.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

Westinghouse Automatic and Continuous Brake.

Description and instructions for working.

Description.

Compressed air is the agent employed to apply the brake. The air is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself, in the case of a break-away, or the failure of its main pipe or couplings.*

The tender and each of the vehicles of the train are fitted with the following parts :—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston ; the latter in connexion with (4) the brake lever and blocks.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle.

To apply the brake, air is allowed by the driver to escape, or in an emergency, by any of the guards. This causes the triple valves to move down, the air stored in the supplementary reservoirs to pass instantly into the cylinders, the pistons and rods to be forced out, and the blocks to press against the tyres of the wheels.

To release the blocks from the wheels, air is allowed to pass from the main reservoir along the train. This moves the triple valves up, re-charges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the steam cylinder is kept well lubricated, (2) that the air pump is sparingly lubricated with a small quantity of mineral oil—tallow or lard oil must not be used in the air pump,—(3) that the pump is constantly run, but *never faster than is necessary to maintain the required air-pressure*, say for stopping trains 60 lbs., and for express trains 85 lbs.

The brakes must not be used with more than half the full force, except in case of danger.

The brakes are fully set when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

To apply the brakes lightly, the tap must be partially opened and gently closed when the pressure has been reduced from 4 to 8 lbs.

In releasing the brakes the handle must be moved against the stop and kept there for about five seconds, and then moved back just far enough to stop the flow of air from the small hole in the top of the tap.

Drivers, upon feeling the brakes are applied, must at once aid in stopping the train by turning the three-way cock and preventing escape of air from the main reservoir.

Guards.—After making up or adding to a train, or after another engine has been attached, the rear guard must ascertain whether the brake is connected throughout by examining the pressure in the gauge, slightly opening its escape tap, and ascertaining that air escapes, or, when a van is not the last vehicle, by opening the rear tap in the brake pipe.

Guards, when they have occasion to apply the brake from a van, must hold the handle and allow the air to escape until the train is brought to a standstill, but must only use the brake in case of emergency.

Guards *must, in all cases, screw the hand brakes clear off before starting.*

General.—Before detaching the engine, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which taps should be open when the hose couplings are united, except the one at the rear of the train. These taps must always be opened *after* connecting the hose couplings, *and closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small taps in the brake cylinder or pipes leading thereto. These taps, after the release of the brakes, must be closed. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting.

It is important to observe that the taps at the ends of the vehicles are open when the handles stand across, or away from the line of pipe, and closed when parallel to, or alongside the pipe.

When the handle of the tap of the triple valve stands across, or away from the valve, it is set for the automatic brake. When against the stop at an angle of 45°, the brake is thrown out of use on the carriage.

Care must be taken (1) that the brake connections are perfect, and properly adjusted for the wear of the blocks and wheels, (2) that the brake cylinders are perfect and lubricated occasionally with *mineral oil*, and (3) that the couplings and other parts are tight.

Carriage examiners must see that the cocks under each carriage are in their proper position before the train starts, so that it may not be delayed on the journey.

Shunters in all cases, after coupling the connexion pipes, must open the cocks at the end of each carriage except the last, so as to complete the brake throughout the train. In uncoupling, the connexion pipe cocks must be shut, but before doing so, shunters must satisfy themselves that the driver has taken the brake off, and that the hand brake at the rear of the train has been applied.

No person must tamper with the tap in the brake van, as by so doing the brake is instantly applied, and cannot be taken off again except by opening the cock under each carriage, or attaching the engine to the train.

Engine-drivers and guards are not to depend entirely upon the action and power of the brake, but, when approaching terminal stations, or junctions, must have their trains well under control, so that the trains can be brought to a standstill with the hand brakes, it necessary.

The engine-drivers and guards must ascertain before the departure of the train if the automatic brake is complete throughout the train.

Trains fitted with this automatic brake must not approach and enter terminal stations at a speed greater than that which has been usual with trains worked by the ordinary hand brake.

J. P. KNIGHT,
General Manager.

London Bridge,
16th April 1878.

LONDON, CHATHAM, AND DOVER RAILWAY.

WESTINGHOUSE AUTOMATIC AIR-BRAKE.

Description.

Compressed air is the power employed to work the brake.

The air, compressed by an air pump on the engine into a main reservoir, flows through the driver's brake valve into the main brake pipe, which extends the whole length of the train, and fills on each carriage a small reservoir by means of the triple valve attached to it. Each triple valve is also connected to a brake cylinder. As soon as the pressure in the brake pipe is lowered, the triple valve piston on each vehicle is moved down by the greater pressure above it, stored in the small reservoir, which is then allowed to pass instantly into the cylinder, force out the piston and rod, and thus cause the blocks to press against the wheels.

The brakes are released by an increase of pressure in the main pipe, produced by allowing air to pass from the main reservoir along the train. This moves up the triple valves, recharges the small reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

The driver or guards can apply the brake, and it applies itself in the case of a break-away or the failure of its main pipe or couplings.

Instructions.

Drivers must see (1) that the top or steam cylinder is kept well lubricated; (2), that the air cylinder is sparingly lubricated with the lubricant provided for the purpose; (3), that the pump shall be constantly run, but never faster than is necessary to maintain the required air pressure, say 50 to 60 lbs. for stopping trains, and from 70 to 80 lbs. for express trains.

For ordinary stops the brake should be applied lightly by turning the handle of the driver's valve to the right, and gently closing it again after a reduction of pressure in the brake pipe of not less than 5 lbs., nor more than 8 lbs., has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working the brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs.

Any further reduction is waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge. The driver, before starting, must ascertain the number of vehicles on the train.

In releasing the brakes the handle must be moved quite against the stop to the left and kept there for about 10 seconds, or until the pointer on the gauge shows signs of rising, and then be moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers must always satisfy themselves that the brake coupling on their engine is properly connected to that on the train, and that *the cocks on the brake pipe, except the one at the rear of the last vehicle connected with the brake, are open.*

The engine and tender brake blocks should be so adjusted that the pistons travel from 2 to 4 inches.

The drivers must be careful to drain the water out of the main reservoir and drip-cup once a week, and in winter time and frosty weather more frequently. The plugs in the triple valves and small reservoirs on engine and tender are to be taken out at least once a month.

If vehicles having different air pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train, and in order that the train may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to the train. When coupled to the train, he must put the handle of his brake valve in the release position until the train is charged with air, and this is shown to have taken place when the pointer of the gauge begins to rise.

If the brakes on the engine and tender are found to apply themselves when the engine is coupled to a train not charged, they should at once be taken off by opening the release valves from the brake cylinders.

After connecting the engine to the train, or after new vehicles have been added, the pipes and reservoirs should be charged as quickly as possible. The brakes should then be applied with full force by the driver, who should not start away until the inspector or guard has signalled that the brakes are acting on all the vehicles.

Should the driver discover any defect in the working of the brake which will render it ineffective, he must at once give the guard notice, and arrange with him as to the use of the hand-brake in the van when necessary.

In running into terminal stations with buffer-stops and at junctions where he has to stop, and also when moving up to attach his engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of the engine that the ordinary application of the hand-brake on the engine or tender will be sufficient to bring the train or engine to rest.

In ordinary stoppages at stations the driver must use the brakes so as to stop the train without any jerk.

When working the Westinghouse brake with two engines coupled together, the driver of the leading engine must take charge of the brake, and he must work it as he would on an ordinary train, not considering the second engine except as a vehicle. The driver of the second engine must keep his handle in the neutral position, and the donkey pump slowly and steadily working; by this means he shuts off all communication from the main reservoir to the train pipe, and the pressure in the reservoir is kept above that in the train pipe, otherwise the brakes would apply themselves by air escaping from the train pipe past the driver's valve to the main reservoir.

The driver, on finding that the brakes have been applied by the guard or automatically by burst hose or couplings parting, must at once aid in stopping the train by turning the handle of the driver's valve towards the right, thus preventing escape of air from the main reservoir.

The driver must enter on his ticket all cases of irregularity in the working of the brake, and call the attention of the examiner at the first station to any defect in the brakes of any of the carriages, and enter their numbers on his ticket.

Guards.—Before leaving the terminus, after adding to a train on the journey, or on another engine being attached, the rear guard must ascertain whether the couplings are connected and the cocks in the brake pipe are all open throughout the train by applying the brakes from his van and seeing that *they are released from the engine.* In making this test the pressure of the air in the pipes as shown by the gauge should not be reduced more than is absolutely necessary. If the brake is not in use on the whole train, or if the van is not the last vehicle, the test should be made by opening the cock in the brake pipe of the last vehicle connected.

A guard, when he has occasion to apply the brake from his van, must open the cock and allow the air to escape until the train is brought to a standstill, but he should only use the brake in cases of emergency.

Guards must in all cases screw the hand-brakes clear off before starting.

The guard must enter on his report all cases of irregularity in the working of the brakes.

Examiners (*Locomotive Department*).—Examiners must see (1) that the brake connections are perfect and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double piston cylinders should each travel not less than two nor more than four inches. Those of single piston cylinders should not travel less than four nor more than eight inches; (2), that the brake cylinders are perfect and lubricated at least every three months with *mineral oil;* (3), that the hose couplings are united and the cocks in the pipes, except the one at the rear of the last vehicle connected with the brake, are open, that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position; (4), that the joints are all air-tight; (5), that the cocks under the carriages connecting the triple valves with the train pipe are full open, and that the release valves on the brake cylinders are in proper working order, with the cords for opening them attached to the sides of the under frame. Examiners, on the arrival of a train, must ascertain from the driver if any irregularity exists in the working of the brake on the carriages, and take steps to remedy the defect, if there is time, before the train starts again. If it is found necessary to cut off the brake by closing the half-inch cock, the carriage must be at once reported, and sent to the shops on arrival at the terminus for examination.

Shunters and Porters, when making up trains or attaching carriages, must *always open the cock on the brake pipe at the end of each carriage after connecting the hose couplings,* except the one at the hind end of the last vehicle in the train, and *always close them before separating the couplings.*

After uncoupling, the loose ends of the hose-pipes must be secured in the hose clips provided for the purpose.

General.—Before detaching the engine or any carriages, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or cock when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is used again.

If the brakes are applied by the separation of the train or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinders or pipes leading thereto.

If the brakes are applied after the engine has been disconnected, they can be released as above or by again connecting the engine.

The brake of any vehicle can be put out of operation without affecting the others by closing the cock under the vehicle between the brake pipe and triple valve.

No person must tamper with the cock in the brake-van, as by so doing the brake is instantly applied and cannot be taken off again except by opening the cock under each carriage or by attaching the engine to the train.

November 1890.

Appendix to "Instructions to Drivers."

The "Instructions" of November 1890, on the working of the driver's brake valve, refer only to the original and older pattern of valve, and drivers must note that if their engines are fitted with the new equalising brake valve, the following instructions for working it must be carried out instead.

New equalising Driver's Brake Valve.

Instructions for Working.

Always reduce the pressure shown on the gauge not less than 8 lbs. in making the first application of the brakes. The second reduction can be any amount necessary, either large or small.

1st or Release Position.—Push the handle over to the LEFT as far as it will go against the stop.

2nd or Running Position.—Pull out the handle from the first position until it comes up against the first projection it meets with on the rim of the case.

This maintains the proper difference of pressure between the main reservoir and the brake pipe (say 20 lbs.) If any brakes creep on again when the handle is brought too soon to the running position after release, put it back to the release for a few seconds and then return it to the running position.

3rd or Neutral Position.—Move the handle a little further to the right, just over the first projection, until it lies against the other side of it.

This cuts off the connexion between the main reservoir and the train pipe.

4th Position for Ordinary Stops.—Turn the handle further to the right until it lies against the next or the second projection on the rim of the case.

5th Position for Quick or Emergency Stops.—Push the handle over to the RIGHT as far as it will go against the stop.

Positions of Handle.—1. Release: to the left as far as it will go. 2. Running: against the left side of the first projection. 3. Neutral: against the right side of the first projection. 4. Ordinary stop: against the left side of the second projection. 5. Quick stop: to the right as far as it will go.

The small spring-seated feed valve maintaining the extra pressure in the main reservoir must be taken out and wiped clean once a week.

Pilot Running.

When two engines are coupled together, if the second engine is fitted with the new brake valve, the driver of the second engine must close the cock under the brake valve, and place the brake valve handle in the release position and leave it there, the driver of the first engine alone working the brakes.

As soon as the pilot engine is detached, the driver of the second engine should re-open the cock under the brake valve.

January 1891.

The Vacuum Automatic Brake.

This Brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Drivers' Instructions.—Before starting see that your gauge indicates at least 18 inches of vacuum. This is done by admitting steam to the small ejector by means of a steam cock placed for that purpose. To apply the brake move the lever on the combination ejector to "on." In ordinary running this lever must stand at "running position." To release the brake move the lever to position "off." *When the vacuum is suddenly destroyed in the main pipe the brake is full* "on." When separated from your train see that the couplings are placed upon the dummies fixed for that purpose.

Guards' Instructions.—To apply the brake press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is to be only employed in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between carriages are properly coupled together, and that the couplings on the end coaches are placed upon the dummies. See by your gauge that a vacuum of 18 inches is maintained. Report otherwise to driver.

General Instructions.—To release the brakes for shunting purposes (the engine having left the train), first see that the hose coupling at one end of the train is off the dummy, then pull the cord which is fixed under the body of each carriage as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes come off by gravity.

March 1885.

LONDON, TILBURY, AND SOUTHEND RAILWAY.

Instructions as to working the Westinghouse Continuous Brake.

Description.

Compressed air is the agent employed to apply the brake. On the engine there is a donkey pump for compressing air into a main reservoir. There is one 13 in. brake cylinder for the driving wheels, and one 8 in. for each other vehicle. A single line of pipe extends the entire length of the train. On the engine and each vehicle is a triple valve having one connexion with main pipe, and second connexion to a reservoir on each carriage, and a third connexion to the brake cylinder. The pipe from the main reservoir leads to a valve and thence to the train. This valve is operated by the driver, who, by the movement of the handle in one direction, admits air to the main pipe from the main reservoir in order to charge the small reservoirs and release the brakes when they are applied, and by moving it in the opposite direction, discharges air from the brake pipe to the atmosphere, and so applies the brakes. If a train breaks in two, the couplings come apart so as to permit the escape of air and the consequent application of the brakes. Similarly, if the pipe is fractured, the brakes are at once applied.

The operation is as follows:—The pump is started and air is compressed into the main reservoir. When the engine is coupled to the train, air passes into the pipe, triple valve, and reservoir on each carriage, charging all equally.

To apply the brakes, the pressure is lowered in the brake pipe by the driver operating his valve. This causes the triple valve to move so as to open a passage for the compressed air from each reservoir to its brake cylinder, the piston of which applies pressure to the levers and brake blocks.

The brakes are fully set when a reduction of pressure to the extent of 25 lbs., shown by the gauge, has been obtained; any further reduction is a waste of air.

The brakes are released by admitting air from the main reservoir to the brake pipe, which re-charges the pipe and triple valves and reservoirs, whilst at the same time a passage is opened from each cylinder to the atmosphere. A cock is placed between each triple valve and the main pipe, so that the brake on any particular carriage can be put out of use. The brakes of the detached portion of a train, if applied, can be released by holding open a valve on each brake cylinder. These release valves close automatically when not held open to release the brakes. There is a cock in each van to apply the brakes, and a gauge on the engine, and in each van to indicate the pressure in the main pipe; there is also a gauge on the engine to indicate the pressure in the brake cylinder.

Instructions.

Drivers must see:—(1) that the top, or steam cylinder of the air pump is kept well lubricated; (2), that the air cylinder is sparingly lubricated with the lubricator provided for the purpose; (3), that the pump is constantly run, but never faster than is necessary to maintain the required air pressure; and (4), that air from 60 to 65 pounds pressure is carried.

For ordinary stops the brake should be applied lightly, by turning the handle of the driver's valve to the right, and gently closing it again, after a reduction of pressure in the brake pipe of not less than 5 lbs. nor more than 8 lbs. has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working the brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs.; any further reduction is a waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge. The driver, before starting, must ascertain the number of vehicles on the train and the number working with brakes or pipes only.

In releasing the brakes, the handle should be kept in release position until the pointer of the indicator shows signs of rising and then be moved back against the intermediate stop, which is the feed position, where it must remain whilst the train is running.

The driver must always satisfy himself that the brake coupling on his engine is properly connected to that on the train, and that the cocks in the brake pipe, *except the one at the rear of the last vehicle connected with the Westinghouse brake* are open.

The blocks of the driving wheel brake should be so adjusted, by turning the screw, that the pistons travel from 3 to 4 inches.

The driver must be careful to drain the water out of the main reservoir once a week, and in frosty weather more frequently.

If vehicles, having different air pressures, be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train, and in order that the train may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to the train. When coupled to the train, he must put the handle of his brake valve in the release position until the train is charged with air, and this is shown to have taken place when the pointer of the indicator begins to rise. If the brakes on the engine are found to apply themselves when the engine is coupled to a train not charged they should at once be taken off by opening the release valve from the brake cylinders.

After connecting the engine to the train, or after new vehicles have been added, the pipes and reservoirs should be charged as quickly as possible. The brakes should then be applied with full force by the driver, who should not start away until the inspector or guard has signalled that the brakes are acting on all the vehicles.

The driver, before commencing a journey, must inform the guard whether the engine is fitted with the brake apparatus or not, in order that he may know how to act as to the use of the hand brakes.

Should the driver discover any defect in the working of the brake which will render it ineffective, he must at once give the guard notice, and arrange with him as to the use of the hand brake in the van, when necessary.

In running into stations with block ends, and at junctions where he has to stop, and also when moving up to attach his engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of his engine that the ordinary application of the hand brakes on the engine will be sufficient to bring the train or engine to rest. In ordinary stoppages at stations, the driver must use the brakes so as to stop the train without any jerk.

The brakes must not be used with more than half their force, except in cases of emergency.

When working the Westinghouse brake with two engines coupled together, the driver of the leading engine must take charge of the brake, and he must work it as he would on an ordinary train, not considering the second engine, except as a vehicle.

The driver of the second engine must keep his handle in the neutral position, and the donkey pump working; by this means he shuts off all communication from the main reservoir to the main pipe of the train.

The driver, on finding that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the driver's valve towards the right, thus preventing escape of air from the main reservoir.

The driver must enter on his engine ticket all cases of irregularity in the working of the brakes.

Guards.—Before commencing a journey must ascertain from the driver whether the engine is fitted with the Westinghouse brake apparatus or not, and before leaving the terminus, or after adding to a train on the journey, or on another engine being attached, the rear guard must ascertain whether the couplings are connected, and the cocks in the brake pipe are all open (except the one at the rear of the last vehicle connected with the Westinghouse brake) throughout the train by applying the brakes from his van and seeing that *they are released from the engine.* In making this test the pressure of air in the pipes, as shown by the indicator, should not be reduced more than is absolutely necessary. If the Westinghouse brake is not in use on the whole train, or if the guard's van is not the last vehicle, the test should be made by opening the cock in the brake pipe of the last vehicle connected.

A guard, if he should have occasion to apply the Westinghouse brake from his van during the running of the train, must open the tap and allow the air to escape until the train is brought to a standstill, but he should only use the Westinghouse brake in cases of emergency.

In running into stations with block ends, and on approaching junctions where the train may have to stop, the guards must be especially prepared to assist the driver by the ordinary application of their hand brakes to bring the train to rest.

The guards must, in all cases, screw the hand brakes clear off before starting.

The guard must enter, on his report, all cases of irregularity in the working of the brakes.

Examiners (Locomotive Department).

Examiners must see:—(1) That the brake connexions are perfect and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double piston cylinders should each travel not less than two, nor more than four inches. Those of single piston cylinders should not travel less than four, nor more than eight inches. (2) That the brake cylinders are perfect and lubricated at least every three months with mineral oil. (3) That the hose couplings are united, and the cocks in the pipes, except the one at the rear of the last vehicle connected with the Westinghouse brake, are open, that is, the handles must stand across or away from the pipe, except the one at the rear of the last vehicle connected with the Westinghouse brake, which must lie along the pipe in the shut-off or closed position. (4) That the joints are all air-tight.

General.—Before detaching the engine or any carriages the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap near its junction with the hose coupling at each end of every vehicle, and these taps must always stand open between each vehicle when the hose couplings are united, and always closed when the hose couplings are not united. After connecting two hose couplings these taps must always be opened, but before separating two hose couplings these taps must always be closed.

The taps are open when the handles stand away from, or at right angles with, the brake pipe, and closed when the handles lie along, or in the same direction as, the brake pipe.

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder or pipes leading thereto. These taps after the release of the brakes must be closed.

If the brakes are applied after the engine has been disconnected, they can be released as above or by again connecting to the engine.

The brake of any vehicle can be put out of operation without affecting the others, by closing the tap under that vehicle, between the brake pipe and triple valve.

No person must tamper with the tap in the brake van, as by so doing the brake is instantly applied, and cannot be taken off again except by opening the cock under each vehicle, or by attaching the engine to the train.

Station masters, inspectors, guards, shunters, and all members of the staff concerned in the working of the trains, must make themselves thoroughly acquainted with the whole of these instructions.

ARTHUR L. STRIDE,
Engineer and Manager.

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAY.

INSTRUCTIONS FOR THE WORKING OF THE VACUUM AUTOMATIC BRAKE.

Engine Driver's Instructions.

Prior to the train being started the driver must see that the gauge indicates at least 18 inches of vacuum, and that not less than this amount is maintained during the journey, and while standing at stations. The vacuum is created by admitting steam to the small ejector by means of the steam cock on combination ejector.

To apply the brake, move the handle on combination ejector in the direction marked "BRAKE ON," and station stops should not be made by a violent application of the brake, but by a destruction of vacuum of, say, from 5 to 10 inches, which should be re-created slowly as the train comes to rest by placing the handle in "running position." By having the vacuum nearly restored at the end of the stop, "jerking" is prevented, and the brake is released without the use of the large ejector.

To release the brake, move the handle on combination ejector in the direction marked "BRAKE OFF."

In ordinary running this handle must stand at "running position."

The driver of a train provided with a continuous brake must, before starting, and at places where engines are changed, ascertain from the head guard the number of vehicles there are on the train, and upon how many of them the brake can be applied, and when any vehicles are attached or detached on the journey, whether the attaching or detaching of such vehicles will interfere with the working of the brake, and if so, to what extent.

The driver must keep his brake on at stations where vehicles are to be attached until the brake pipes are coupled up. If the driver finds a big leakage after a coach has been slipped, he must immediately blow his large ejector and put full steam on to haul the train through the slipping station, so as to keep clear of the slip coach. On stopping clear of the station the leakage can be attended to.

GUARD'S INSTRUCTIONS.

The Guard is not to make Use of the Brake except in Cases of Emergency.

When the guard has occasion to apply the brake, he must press down the handle on the valve placed in his van. This admits air throughout the train pipe. The valve in the van opens automatically when the brake is applied suddenly by the driver, and ensures rapid action. The guard must, before starting, see by the gauge in his van that there is a vacuum of at least 18 inches, and report if otherwise to the driver. He must also see that all the hose couplings between the vehicles, and between the train and engine, are properly coupled together, and that the coupling on the last vehicle is placed upon the plug; and whenever any vehicles are attached or detached he must examine the pipes and couplings.

Guards must report specially, and also enter on their journals, full particulars of any defect, failure, or unsatisfactory working of the brake of their train, or any portion of the fittings, couplings, &c.

The head guard of a train provided with a continuous brake must, before starting the train, and at places where engines are changed, inform the engine driver the number of vehicles there are on the train, and upon how many of them the brake can be applied; and when any vehicles are attached or detached on the journey, the engine driver must be advised, and told whether the attaching or detaching of such vehicles will interfere with the working of the brake on the whole or a portion of train—and if the latter, to what extent.

Terminal stations must be approached cautiously, and guards must apply their hand-brakes should there be any reason to suppose the engineman has not the train well in hand, or that there is the least risk of not being able to stop at the entrance to the station. Guards must have their hands on their hand-brakes when passing the distant signal of a terminal station, and must so remain, and be ready to apply the brakes until the train is stopped at the station.

The working of the continuous brake by the engineman will not relieve the guards from any responsibility. They must keep a good look out, and be prepared to apply their hand-brakes should necessity arise.

Uncoupling Brake Pipes.

The vacuum brake pipes must not be disconnected until the vacuum has been entirely destroyed, and any person entrusted with this duty must satisfy himself that the brake is hard on, by the vacuum being destroyed, before disconnecting the pipes.

At stations where vehicles are to be attached or detached, the driver must keep the brake on until the coupling up of the brake pipe has been accomplished.

General Instructions.

Whenever the hose pipes between the vehicles are disconnected, the coupling must be placed upon the stop-plug at the end of the vehicle, which must be clean and dry, especially in frosty weather.

To release the brake for shunting purposes (the engine having left the train), the porter must first see that the hose coupling at one end of the train is off the plug, and then pull the wire fixed under the frame of each carriage, the position of which is indicated by a red star on the frame of each carriage. This admits air to the top side of the cylinder, and the brakes fall off by gravity.

To couple the hose pipes the porter or man appointed must take one in each hand, and lift them sufficiently high to hook the bottom horns of the couplings together first, and then by lowering them, place the top horns of the couplings in the slots.

The vacuum brake pipes must not be disconnected until the vacuum has been entirely destroyed, and any person entrusted with this duty must satisfy himself that the brake is hard on by the vacuum being destroyed before disconnecting the pipes.

To uncouple the hose pipes the porter or man appointed must, after the vacuum in the pipes has been destroyed, simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate; and when either coupling or uncoupling the hose pipes he must have his hands quite free from cotton-waste or anything else that would be likely to be drawn into the pipes by the suction of the vacuum. The coupling up of the brake pipes must be done as quickly as possible, so as to enable the driver to recreate his vacuum quickly. In winter any frozen snow or ice with which the hose pipe couplings or plugs may have become coated must be cleaned off before coupling them together, so that the india-rubber washers may properly meet each other and be airtight.

Station masters, inspectors, and foremen must select experienced men to couple together the pipes of vehicles fitted with any air brake, and must carefully examine the couplings before starting the train. They must give special attention to the proper coupling of air brake pipes, and make such arrangements as will ensure these pipes being cared for and not improperly used.

In those vehicles, such as Great Eastern or other company's stock, which have two or more coupling pipes at each end, the pipes which are used to work the brake must, when coupled, be above the pipe or pipes which are not in use.

When vehicles fitted wtih the continuous air brake are left in sidings or at stations, the vacuum on every vehicle must be completely destroyed by pulling the release wires fixed under the coaches, and the brake pipes of each vehicle must be coupled together or placed upon the plugs and not left hanging loose. Porters and others are cautioned that in passing between vehicles THEY MUST NOT STEP UPON THE BRAKE PIPES, nor interfere with or injure the connections.

In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together, and next to the engine, and the guard in the rear van must immediately upon the continuous brake being applied by the driver apply his hand-brake, and keep it tightly on, either until the train has come to a stand or the driver has taken off his brake, and is again going forward, as the case may be. This arrange-

ment is necessary to prevent the rebound of the carriages and possible breaking of the drawbars, which may occur when a powerful brake is applied to the front portion of the train only.

Enginemen must test the brake before starting, at each station where the engine is changed, and again at each station where any vehicle is attached or detached. They must satisfy themselves before passing the distant signal of any station at which the train has to stop or reduce speed, that the brake is in good working order, and on passing the distant signal of any terminal station the brake must be applied and speed of train reduced by it *The train must not be allowed to travel between the distant signal and any terminal station at a higher rate of speed than will admit of its being stopped at the entrance to station by the application of the ordinary hand brakes only.* Enginemen must from time to time, and whenever they are likely to have to make use of the brake, test its working. Unless the brake is working properly when thus tried, the engineman must whistle for the guard's hand brakes, stop the train, and inform the guards the continuous brake is out of order; and the hand brakes must be relied upon for working the train. Special care must then be taken in approaching stations at which the train has to stop.

Should it be necessary at any time to send goods guards, shunters, or porters as acting guards in charge of the trains in lieu of the ordinary guards, care must be taken to ascertain that they are conversant with the working of the continuous brake, and with the instructions in connection with it, for the guidance of passenger guards.

MERSEY RAILWAY.

Vacuum Continuous Automatic Brake.

All engines and carriages owned by the Mersey Railway are fitted with this brake apparatus.

This can be applied throughout *the train* by either the driver from the engine or the guard from the brake-van. The engines of the new "Victoria" class are fitted with the vacuum brake, but in engines of the old "Major" class, the apparatus, although *worked* from the engine, does not put on the brakes on the *engine or tender*, a steam brake being supplied for this purpose, which applies itself automatically whenever the vacuum brake is used, but can also be used independently.

The continuous brake must be used by *the drivers for all stoppages, but the guards must not make use of it* except in cases of absolute necessity, and whenever they do so, a full and special report must be made of all the circumstances, the fact being also noted on their daily report.

The amount of brake power at command depends upon the amount of vacuum obtained, and before starting, the driver must see that the gauge indicates at least 18 inches of vacuum. This is obtained by admitting steam to the small ejector by means of the steam cock provided for the purpose. To apply the brake, move the lever on the brake valve to "ON." In ordinary running this lever must stand at "RUNNING POSITION." To release the brake the lever should be in the position "OFF." When the vacuum is suddenly destroyed in the main pipe the brake is full "ON."

When the guard has occasion (*in emergency only*) to apply the brake he must press down the lever on the valve placed in his van. This admits air throughout the train pipe and the brake is at once applied. The valve in the van opens automatically when the brake is applied violently by the driver and ensures rapid action, but it must, however, not be so applied except in cases of emergency. The guard must see by his gauge that a vacuum of at least 18 inches is maintained; if it falls below this amount he must at once report the fact to the driver.

In the event of a break loose, the continuous brake will be automatically applied, but the guard in the rear van must not rely solely on this, but must put his hand brake hard on and firmly secure it before going back to protect his train.

It is the duty of the fireman, when the engine is attached to the train, to connect the hose coupling on the engine or tank to that on the train; and it is his duty when the engine is detached to place the hose couplings, after disconnecting them, on the respective plugs provided for the purpose. The driver is responsible for this duty being properly attended to by the fireman.

It is the duty of the shunter or porter to connect the hose couplings between the carriages, and to place the hose coupling in rear of the last vehicle on the plug provided for the purpose. The guard is held responsible for this being done. When trains or carriages are placed in the carriage sheds or sidings at the termination of the day's work, the hose coupling at the end of the train or carriage must be taken off the plug, and the driver, before detaching his engine, must put full steam on the large ejector and blow through for at least one minute while the coupling is off the plug. The coupling can be replaced and the engine detached. The carriage foreman at the Central station and the station inspector at the other stations will be responsible for this being carried out.

When empty trains are left in the temporary sidings in the tunnel east of Liverpool Central, or at other places where the gradient is severe, the hand-brakes must be placed hard on before the engines are detached. The guard will be held responsible for this being done.

To release the brakes, after the engine has been detached, the hose coupling at one end of the train must be taken off the plug, the wire fixed under the body of each carriage must be pulled as indicated by the arrows. This admits air to the top side of the cylinder and the brakes fall off by gravity. It is the duty of enginemen in every instance, *before taking their engines out of the shed*, to test the apparatus on both engine and tender, and also when engine is fitted with STEAM BRAKES, whether in addition to the vacuum brake or otherwise, they must be tested with full steam pressure.

Enginemen must always test the continuous brakes, to satisfy themselves that they are in proper working order, after their engines are attached to the trains and immediately before starting.

Drivers must have their trains under such control when approaching terminal stations as will enable them if necessary to stop at the required place, by using only the engine steam brake and guard's hand brake.

METROPOLITAN RAILWAY.

Instructions for Working the Automatic Vacuum Brake.

All trains on which this brake is fitted will be controlled by the driver only, except in cases of emergency, such as unusual stoppage or accident to train or engine.

Before starting, the driver must see that the gauge indicates at least 18 inches of vacuum, which must be maintained during the journey. The vacuum is created and retained by admitting steam to the small ejector. To apply the brake move the lever on the combination ejector to "ON." In ordinary running this lever must stand at "RUNNING POSITION." To release the brake move the lever to position "OFF." Before starting with the train the driver is to test the connecting pipes to see if they are properly coupled up, by turning steam into the ejector.

In cases of emergency, or when called by whistle to do so by the driver, the guard will apply the brake by pressing down the lever of valve in van; he will see that all pipes between carriages are properly coupled together, and that the coupling on the rear end coach is placed upon the dummy. He must also see by the gauge in his van that 18 inches of vacuum is maintained, and report, if otherwise, to the driver. The working of the automatic brake by the engineman will not relieve the guards from any responsibility. They must keep a good look out, and be prepared to apply the hand brakes should necessity arise.

In approaching all terminal stations, the train must be completely under control before the engine reaches the platform, so that a careful stop may be made by the hand brake of the engine only, but the guards must be prepared to assist with hand brakes in van if required. Should it be necessary for the driver to use the vacuum brake, a special report must be made detailing the circumstances. When the brake is to be used for ordinary stoppage of trains, it must be done by the driver opening the air valve on the engine gradually, not suddenly or with full force except in cases of emergency.

Shunters, porters, and others when connecting or disconnecting automatic brake pipes, must be careful not to have in their hands waste or anything that may be drawn into the pipes by the action of the vacuum. To release the brake for shunting purposes (the engine having left the train) they must first see that the hose coupling at one end of the train is off the dummy, then pull the chain which is fixed under the body of each carriage. They must also be careful in passing between vehicles not to step upon the brake pipes or interfere with the connections in any way. Whenever he hose pipes between the vehicles are disconnected the couplings must be placed upon the dummies.

JOHN BELL,
General Manager.

General Manager's Office,
32, Westbourne Terrace.
31st August 1892.

METROPOLITAN DISTRICT RAILWAY.

INSTRUCTIONS FOR WORKING TRAINS DURING THE CONVERSION FROM THE WESTINGHOUSE NON-AUTOMATIC TO THE WESTINGHOUSE AUTOMATIC BRAKE.

General Explanation.

Trains fitted with the automatic brake (hereafter called "automatic trains") can be distinguished by a white cross on the red painted end of the brake compartment, also by having a stop-cock between the iron brake pipe and the india-rubber hose pipe at each end of train, and a stop-cock in a wooden case and an air-pressure gauge in each guard's compartment.

The stop-cocks at the ends of trains next the engine and on the engines next the train must always be opened *after connecting the hose couplings and always closed before separating them.*

For all ordinary stops the brakes of the whole train will be applied and released by the driver from the engine.

If the brakes are applied by the accidental separation of the train or the breaking of a pipe, or from any leakage, they can be released by opening the release valves in the brake cylinder pipes; the chains by which these are released will be found under and attached to the top footboard of each carriage, where the footboard is notched to indicate their position.

INSTRUCTIONS TO DRIVERS OF ENGINES WITH AUTOMATIC BRAKES.

The air in the main reservoir should be maintained at not less than 60 to 65 lbs. pressure.

When the engine is attached to a train the driver must see that the cocks at the ends of the brake pipes between the engine and train *are opened after the hose couplings are connected, the cock at the other end of the engine being kept shut.*

To work Automatic Trains.

After the engine is attached to the train, all the train reservoirs are charged by turning the handle of the driver's brake valve to the first position, with the handle *as far to the left* as it will go, for *about* 10 *seconds;* it is then brought to its second position, which is a very short distance more towards the driver, and it remains there while the train is running.

For ordinary stops the brakes should be applied lightly by turning the handle to the *right* and gently closing it again, after a reduction of the pressure in the brake pipe of *not less than* 5 *lbs. or more than* 8 *lbs.* has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working, the brakes are fully applied when the pressure in the brake pipe is reduced 25 lbs.; any further reduction is waste of air.

The brakes must always be eased off before coming to a dead stop, to avoid jerking the train.

In releasing the brakes the handle must be moved quite against the stop on the left side, *kept there about* 10 *seconds*, and then moved back to the second or running position, and left there until the brakes have again to be applied.

When approaching a terminus or a station where the train has to change engines, the air pressure in the engine main reservoir and in the whole train should be somewhat reduced, say 10 to 15 lbs. The driver of the engine that is to proceed with the train must see that he has the *full pressure* in his main reservoir before the engine is attached to the train.

Neglect of these precautions may cause delay, by the brakes not coming off freely before the train starts with the second engine.

Drivers upon feeling that the brakes have been applied by the guard or automatically *must at once turn the handle to the right*, thus preventing escape of air from the main reservoir.

To work Non-automatic Trains.

When running, the handle of the driver's brake valve must stand to the *right*, and must be gently moved towards the *left* to apply the brakes, and turned back to the *right* to release them, great care being taken not to apply the brakes too suddenly or to jerk the trains when stopping.

INSTRUCTIONS TO DRIVERS OF ENGINES WITH NON-AUTOMATIC BRAKES.

The air in the main reservoir should be maintained at not less than 60 to 65 lbs. pressure.

To work Automatic Trains.

When the engine is attached to an automatic train the driver must see that the stop-cock on the brake pipe at the end of the train next the engine *is opened after the hose couplings are connected.*

The train reservoirs are charged with air by turning the handle of the three-way cock, at the back of the fire-box shell, towards the *right*, and it must remain in that position while the train is running.

For ordinary stops the brakes should be applied lightly by turning the handle to the *left* and closing it again gently to the right; it is not necessary to let all the air out of the brake pipe, except in cases of great emergency when a sudden stop has to be made.

The brakes must always be eased off before coming to a dead stop, to avoid jerking the train.

In releasing the brakes, the handle must be moved to the *right*, when the train reservoirs will again be charged, and the brakes will be in the position for running.

When approaching a terminus or a station where the train is to change engines, the air pressure in the engine main reservoir and in the whole train should be somewhat reduced, say 10 to 15 lbs.; the driver of the engine that is to proceed with the train must see that he has the *full pressure* in his main reservoir before the engine is attached to the train.

Neglect of these precautions may cause delay by the brakes not coming off freely before the train starts with the second engine.

Drivers upon feeling that the brakes have been applied by the guard or automatically *must at once turn the handle to the left*, thus preventing escape of air from the main reservoir.

To work Non-automatic Trains.

When running, the handle of the three-way cock must stand to the *left*, and must be gently moved towards the *right* to apply the brakes, and turned back to the *left* to release them, great care being taken not to apply the brakes too suddenly or to jerk the train when stopping.

GEORGE ESTALL,
Locomotive Superintendent.

Lillie Bridge Works,
22nd August 1890.

SPECIAL INSTRUCTIONS TO GUARDS OF AUTOMATIC BRAKE TRAINS.

Before leaving a terminus or when another engine is attached to the train, the head guard must ascertain that the hose couplings are connected and that the cocks in the brake pipe between the engine and train are open, by applying the brakes from his own van (by opening the air-cock and closing it again), and seeing that they are released by the driver from the engine.

Previous to starting a train from a terminus the head guard must, in addition, see that the air-cock at the tail end of the train is shut, by the handle being turned up to a vertical position or in a line with the iron pipe.

For all ordinary stops the brakes on the whole of the train will be applied and released by the driver from the engine, but in order to enable the guard at either end of the train to apply the brakes in case of emergency, each guard's brake-compartment will be provided with a stop-cock (enclosed in a wooden case), and either guard can, by opening this stop-cock and allowing the air to escape from the brake pipe, apply the brakes and stop the train. This stop-cock must be closed again before the brakes can be released.

Guards must in all cases screw the hand-brakes clear off before starting, but must observe the air-gauge in their compartment, and be prepared to use the hand-brake if the air-gauge shows that there is no pressure of air in the brake-pipe while running, thus indicating that the air-brake is not in working order.

Chains attached to the release-valves in the brake cylinder pipes have been provided for the purpose of releasing the brakes by hand, should they be put on by the accidental separation of the train, or the breakage of a pipe or leakage of air. These chains are attached to the underneath side of the top footboard of each carriage, and the footboard is notched to indicate their position.

ALFRED POWELL,
Manager.

Parliament Mansions, S.W.,
22nd August 1890.

MIDLAND RAILWAY.

VACUUM AUTOMATIC BRAKE.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Instructions to drivers. — Before starting from any station, see that your gauge indicates 20 inches of vacuum, and that not less than this amount is maintained during the journey, and while standing at stations.

To apply the brake, open the air valve on the engine.

To release the brake, close the air valve and restore the vacuum to the same amount as existed before the application.

When the engine is attached to the train and the brake pipes are connected, put on the small ejector, and keep it on while at the stations, and during the journey, in order that a constant vacuum may be maintained.

The brake must be applied steadily, which can always be done by opening the air valve gradually; but in a case of emergency the valve must be pulled open suddenly. The large ejector may be used to raise a vacuum rapidly, or when the brake requires to be taken off quickly; but in either case it must be closed gradually.

When stopping the trains under ordinary circumstances, drivers must ease the brake off before finally coming to a stand.

Instructions to guards. — After the engine is attached to the train or when an engine is changed or a pilot engine or any vehicle is attached or detached, the guard in charge must ascertain whether the brake is coupled up and in working order throughout the train, and between the train and the engine. This must be done by lifting the brake valve a *little* in the rear van, when, if there is an inrush of air through the valve, the brake will be all right; but if no inrush takes place, the guard must inform the driver that there is no vacuum in his van.

To apply the brake, lift up the valve, which will admit air throughout the brake pipe, but this is only to be done in a case of emergency. The valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between the vehicles are properly coupled together, and that the coupling is on the stop plug at the rear of the train. See by your gauge that a vacuum of 20 inches is maintained, and report, if otherwise, to the driver.

The needle on the left-hand side of the gauge in the guard's van indicates the amount of vacuum in the brake pipe.

The needle on the right-hand side of this gauge indicates the amount of vacuum in the reservoir.

When the brake is applied fully, the needle on the left-hand side will go to "O," and the needle on the right-hand side will indicate the amount of vacuum holding the brake on.

In the event of a train becoming divided or separated from the engine when going up a rising gradient, the guard must apply his hand brake tightly, and take such other measures as may be necessary to prevent the vehicles from moving.

General Instructions.—Whenever the pipes between the vehicles are disconnected, the couplings must be placed upon the stop plugs at the end of the vehicles.

To couple the hose pipes the porter must take one in each hand and lift them sufficiently high to hook the bottom horns of the couplings together first, and then by lowering them, place the top horns of the couplings in the slots.

To uncouple the hose-pipes the porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate. Porters, when coupling or uncoupling the pipes, must have their hands quite free from cotton waste or anything else that would be likely to be drawn into the pipes by the suction of the vacuum.

In winter, any frozen snow or ice with which the hose pipe, couplings, or plugs, may have become coated, must be cleaned off before attempting to couple them together, so that the india-rubber washers may properly meet each other, and be air-tight.

To release the brake for shunting purposes on vehicles fitted with ball valves (the engine having left the train) first see that the hose coupling at one end of the train is off the stop plug and then pull the release cord or wire which is fixed under the frame of each vehicle, the position of which is indicated by a small white star painted on the sole bars. This admits air to the top side of the cylinder, and the brake comes off by gravity.

When the release wire has to be pulled for the purpose of taking the brake off, it must always be held by hand until the brake comes off, and must never be fastened over.

Whenever the vacuum automatic brake pipes are not connected with each other, they must be placed upon the stop plugs at the ends of the vehicles.

When vehicles fitted with continuous brakes are placed in sidings, the continuous brakes must, in all cases, be released, and when it is necessary that a brake should be applied for the purpose of keeping the vehicles from moving, the ordinary hand brakes must be used.

Vacuum Automatic Brake Levers in Guards' Vans.

Guards and others concerned must take care that articles are not placed in guards' vans in such a position as to be liable to come in contact with the brake lever.

Westinghouse Automatic and Continuous Air Brake.

Description and Instructions for Working.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train are fitted with the following parts:—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston rods; the latter in connection with (4) the brake lever and blocks. Upon the engine a main reservoir also is fitted.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle, but in the main reservoir the pressure is about 10 lbs. in excess of that in the train.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top, or steam cylinder, is kept well lubricated, (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum—*tallow or oil must not be used in the air cylinder*—(3) that the pump is *constantly run*, but never faster than is necessary to maintain the required air-pressure, and (4) *that air from 50 to 60 lbs. pressure for stopping trains and from 70 to 80 lbs. pressure for express trains*, is carried.

For ordinary stops the brake must be applied lightly, by opening the valve, and closing it gently when the pressure has been reduced from 4 to 8 lbs. on the gauge.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

In releasing the brakes the handle must be moved quite against the stop and kept there for about ten seconds, and then moved back against the intermediate stop, which is the feed position, *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake valve towards the right, thus preventing the escape of air from the main reservoir.

The blocks of the driving wheel brake must be so adjusted by turning the screw that the pistons move up from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time.

If vehicles having different air pressures be coupled together the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes on the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train, and then put the handle of his brake valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged they must be at once taken off by opening the release valves from the brake cylinders.

Guards.—After making up a train, after attaching or detaching any vehicle, or after another engine has been attached, the rear guard must ascertain whether the couplings are connected, and the cocks in the brake pipe are all open throughout the train, by applying the brakes from his van, and seeing that *they are released from the engine.* If the brake is not in use on the whole train, or if the van is not the last vehicle, the test must be made by opening the cock in the brake pipe of the last vehicle connected.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they must only use the brake in case of emergency. The tap in the van must again be closed when the train has come to a stand.

The pressure gauge in the van must be observed.

Guards must, in all cases, screw the *hand-brakes clear off* before starting.

General.—Before detaching the engine or any vehicle, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which must be open when the hose couplings are united, except the one in the rear of the train. *These taps must always be opened after connecting the hose couplings, and always closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the release valve in the pipe leading to the brake cylinder. This is done by pulling the cord under the frame of each vehicle, the position of which is indicated by a small white triangle painted on the sole bars. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brake of any vehicle can be put out of operation without affecting the others, by closing the tap under that vehicle between the brake pipe and triple valve.

Care must be taken (1) that the brake connections are perfect, and properly adjusted for the wear of the blocks and wheels, by being *uniformly* taken up. The pistons of the double piston cylinders should each travel not less than two nor more than four inches; and those of the single piston cylinders should travel not less than four nor more than eight inches; (2) that the brake cylinders are perfect, and lubricated at least every three months with *mineral oil;* (3) that the hose couplings are united and the cocks in the pipes are open, that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position; and (4) that the joints are all air-tight.

When there are upon a train any vehicles fitted with the Westinghouse brake, and that brake is not in use upon such vehicles, the handle of the tap at each end of each vehicle must be placed across or away from the pipe in order that the brake may be applied and the air let out of the main pipe; the air must then be allowed to escape from the cylinder by means of the release tap under the vehicles. This is necessary to avoid the brake leaking on and delaying the trains.

To enable the staff to readily ascertain whether the vehicles supplied with the Westinghouse brake pipe are fitted with the brake apparatus, or with the connecting pipes only, the cock at each end of all vehicles having connecting pipes only has been painted red.

MIDLAND AND GREAT NORTHERN (EASTERN SECTION).

Vacuum Automatic Brake.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Instructions to drivers.—Before starting from any station see that your gauge indicates 20 inches of vacuum, and that not less than this amount is maintained during the journey, and while standing at stations.

To apply the brake, open the air-valve on the engine.

To release the brake, close the air-valve, and restore the vacuum to the same amount as existed before the application.

When the engine is attached to the train, and the brake pipes are connected, put on the small ejector, and keep it on while at the stations, and during the journey, in order that a constant vacuum may be maintained.

The brake must be applied steadily, which can always be done by opening the air-valve gradually; but in a case of emergency, the valve must be pulled open suddenly. The large ejector may be used to raise a racuum rapidly, or when the brake requires to be taken off quickly; but in either case, it must be closed gradually.

When stopping the trains under ordinary circumstances, drivers must ease the brake off before finally coming to a stand.

Instructions to guards.—After the engine is attached to the train, or when an engine is changed or a pilot engine or any vehicle is attached or detached, the guard in charge must ascertain whether the brake is coupled up, and in working order throughout the train, and between the train and the engine. This must be done by lifting the brake valve a *little* in the rear van, when, if there is an inrush of air through the valve, the brake will be all right, but if no inrush takes place, the guard must inform the driver that there is no vacuum in his van.

To apply the brake, lift up the valve, which will admit air throughout the brake pipe, but this is only to be done in a case of emergency. The valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between the vehicles are properly coupled together, and that the coupling is on the stop-plug at the rear of the train. See by your gauge that a vacuum of 20 inches is maintained, and report, if otherwise, to the driver.

The needle on the left-hand side of the gauge in the guard's van indicates the amount of vacuum in the brake pipe.

The needle on the right-hand side of this gauge indicates the amount of vacuum in the reservoir.

When the brake is applied fully, the needle on the left-hand side will go to "O," and the needle on the right-hand side will indicate the amount of vacuum holding the brake on.

In the event of a train becoming divided or separated from the engine when going up a rising gradient, the guard must apply his hand-brake tightly, and take such other measures as may be necessary to prevent the vehicles from moving.

General Instructions.—Whenever the pipes between the vehicles are disconnected, the couplings must be placed upon the stop-plugs at the end of the vehicles.

To couple the hose-pipes, the porter must take one in each hand, and lift them sufficiently high to hook the bottom horns of the couplings together first, and then by lowering them, place the top horns of the couplings in the slots.

To uncouple the hose-pipes, the porter must simply lift them straight up, when the horns at the top will come out of the slots, and the couplings will then separate. Porters, when coupling or uncoupling the pipes, must have their hands quite free from cotton waste or anything else that would be likely to be drawn into the pipes by the suction of the vacuum.

In winter any frozen snow or ice with which the hose-pipe, couplings, or plugs, may have become coated, must be cleaned off before attempting to couple them together, so that the india-rubber washers may properly meet each other, and be air-tight.

To release the brake for shunting purposes on vehicles fitted with ball-valves (the engine having left the train) first see that the hose-coupling at one end of the train is temporarily taken off the stop plug, and then pull the release-wire which is fixed under the frame of each vehicle, the position of which is indicated by a small white star painted on the sole-bars. This admits air to the top of the cylinder, and the brake comes off by gravity.

When the release-wire has to be pulled for the purpose of taking the brake off, it must always be held by hand until the brake comes off, and must never be fastened over.

Whenever the automatic vacuum brake pipes are not connected with each other, they must be placed upon the stop plugs at the ends of the vehicles.

When vehicles fitted with continuous brakes are placed in sidings, the continuous brakes must, in all cases, be released, and when it is necessary that a brake should be applied for the purpose of keeping the vehicles from moving, the ordinary hand brakes must be used.

Vacuum Automatic Brake Levers in Guards' Vans.

Guards and others concerned must take care that articles are not placed in guards' vans in such a position as to be liable to come in contact with the brake lever.

Westinghouse Automatic Air Brake.

Description and Instructions for working.

Description.—The air used to apply the brake is compressed by a small engine and pump placed on the

locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a breakaway, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train are fitted with the following parts:—(1) a triple value (2) a supplementary air reservoir, and (3) a cylinder with piston rods; the latter in connection with (4) the brake lever and blocks. Upon the engine a main reservoir also is fitted.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle, but in the main reservoir the pressure is about 10 lbs. in excess of that in the train.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.— Drivers must see (1) that the top, or steam cylinder, is kept well lubricated. (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum,—*tallow or oil must not be used in the air cylinder.*—(3) that the pump is *constantly run*, but never faster than is necessary to maintain the required air-pressure,—and (4) *that air from* 50 *to* 60 *pounds pressure for stopping trains, and from* 70 *to* 80 *lbs. pressure for express trains*, is carried.

For ordinary stops the brake must be applied lightly, by opening the valve, and closing it gently when the pressure has been reduced from 4 to 8 lbs. on the gauge.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

In releasing the brakes the handle must be moved against the stop and kept there for about ten seconds, and then moved back against the intermediate stop, which is the feed position, *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake valve towards the right, thus preventing the escape of air from the main reservoir.

The blocks of the driving wheel brake must be so adjusted by turning the screw, that the pistons move up from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time.

If vehicles having different air pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes on the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train; and then put the handle of his brake valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they must be at once taken off by opening the release valves from the brake cylinders.

Guards.—After making up a train, after attaching or detaching any vehicle, or after another engine has been attached, the rear guard must ascertain whether the couplings are connected, and the cocks in the brake pipe are all open throughout the train, by applying the brakes from his van, and seeing that *they are released from the engine.* If the brake is not in use on the whole train, or if the van is not the last vehicle, the test must be made by opening the cock in the brake pipe of the last vehicle connected.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they must only use the brake in case of emergency. The tap in the van must again be closed when the train has come to a stand.

The pressure gauge in the van must be observed.

Guards must, in all cases, screw the *hand-brakes clear off* before starting.

General: Before detaching the engine or any vehicle, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which must be open when the hose couplings are united, except the one in the rear of the train. *These taps must always be opened after connecting the hose couplings, and always closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the release valve in the pipe leading to the brake cylinder. This is done by pulling the cord under the frame of each vehicle, the position of which is indicated by a small white triangle painted on the sole bars. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brake of any vehicle can be put out of operation without affecting the others, by closing the tap under that vehicle between the brake pipe and triple valve.

Care must be taken—(1) that the brake connections are perfect, and properly adjusted for the wear of the blocks and wheels by being *uniformly* taken up; the pistons of the double piston cylinders should each travel not less than two, nor more than four inches, and those of the single piston cylinders should travel not less than four, nor more than eight inches; (2) that the brake cylinders are perfect and lubricated at least every three months with *mineral oil;* that the hose couplings are united and the cocks in the pipes are open, that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position; and (4) that the joints are all air-tight.

When there are upon a train any vehicles fitted with the Westinghouse brake, and that brake is not in use upon such vehicles, the handle of the tap at each end of each vehicle must be placed across or away from the pipe in order that the brake may be applied and the air let out of the main pipe; the air must then be allowed to escape from the cylinder by means of the release cord under the vehicles. This is necessary to avoid the brake leaking on, and delaying the trains.

To enable the staff to readily ascertain whether the vehicles supplied with the Westinghouse brake pipe are fitted with the brake apparatus, or with the connecting pipes only, the cock at each end of all vehicles having connecting pipes only is painted red.

NORTH-EASTERN RAILWAY.

The Westinghouse Automatic Brake.

Description.

General Principle of its Action.

Compressed air is the power employed to work the brake. The air, compressed by an air pump on the engine into a main reservoir, flows through the driver's brake valve into the main brake pipe, which

extends the whole length of the train, and fills under each carriage a small reservoir by means of the triple valve attached to it. Each triple valve is also connected to a brake cylinder. As soon as the pressure in the brake pipe is lowered the triple valve piston under each vehicle is moved down by the greater pressure above it, stored in the small reservoir, and this pressure passes instantly into the cylinder, forces out the piston and rod, and thus causes the blocks to press against the wheels.

The brakes are released by an increase of pressure in the main pipe, produced by allowing air to pass from the main reservoir along the train. This moves up the triple valves, recharges the small reservoirs, and at the same time allows the air which had passed into the cylinders and forced out the pistons, to escape into the atmosphere.

Instructions as to its Proper Working.

Drivers.—The top or steam cylinder of the donkey-pump must be kept well lubricated with the best olive oil, by means of the lubricator only.

The small oil cup on the air cylinder must be filled once a week (and then only when the cylinder is cool) with paraffin. No other lubricant must be used.

The steam valve in communication with the donkey-pump must first be opened slightly until a small pressure of air is obtained, and then kept fully open whilst the engine is on duty. A governor is attached to the pump for the purpose of checking it when the standard pressure of 60 lbs. is obtained in the main pipe.

N.B.—The steam valve to the pump must only be shut off when oil has to be put into the lubricator.

The main reservoir must be drained once a week, and in frosty weather more frequently. The drip cup must be drained at least once every two days.

Pistons in short cylinders must not travel less than 2, or more than 4½ inches, and those in long cylinders not less than 3½ or more than 7 inches.

The driver is responsible for the connections between the engine and the first vehicle being perfect, and the cocks on the main pipe open.

Before and when attaching to a train the driver must see that his brake handle is in the feed position, and that he has the maximum pressure of air (60 lbs.) allowed in his main pipe, and that the tap below the driver's valve is open.

After the engine has been attached to the train (and also whilst standing at stations) the driver must keep his handle in the feed position so that whatever reductions are made by attaching, or the guard testing the train, he may be able to release the brakes when he gets the signal to start.

The driver must not put his handle into release position until after he receives the signal to start, and should the engine and tender brakes be on, the driver must release them by the cocks provided for that purpose.

When two or three attachments are to be made, the driver must be careful to put only a low pressure of air into the first and second portions, and after the third or last portion has been attached he must keep his handle in neutral position until he gets the signal to start; he must then place his handle in the release position and leave it there until the gauge shows a gradual increase of pressure.

To apply the brake the driver must lightly turn his handle to the right ("brake on" position) allowing not less than 5, or more than 8 lbs. of air to escape, and then gently close the valve again by placing the handle in neutral position. Should it be necessary for a driver to apply the brake immediately after releasing it, he must make a greater reduction from the main pipe than he did when first applying it. In fact he must allow the air to escape until he feels that the brakes are applied.

A reduction of 25 lbs. applies the brake with full force, but in cases of emergency the handle must be brought against the "brake full on" stop, and kept there until the train comes to rest.

If after a reduction has been made, the pressure runs up on the gauge, it shows the outflow of air has been too suddenly checked, and that probably some, if not all the brakes have come off again.

The driver's handle must not be put into release position before applying the brake, as it destroys the reserve pressure.

To avoid skidding the wheels, great care must be taken to apply the brake lightly for ordinary stops.

When stopping at stations the brake must be so applied that the train will be brought to rest without rebounding.

To release the brake the driver's handle must be put quickly over into release position, and kept there until the gauge shows a gradual increase of pressure, which indicates that the train is equally charged throughout; the handle must then be brought back into feed position.

The driver of a train running direct or backing into a platform with a buffer-stop at the end or to a platform where another train is standing, must do so cautiously, and at a proper distance from the place where the train has to come to a stand must test the continuous brake, and then run forward under the control of the hand brake only, not using the continuous brake except in case of emergency.

When approaching any principal station or junction where the train has to stop, and also when moving up to attach the engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of his engine that the ordinary application of the hand brakes on the engine and tender will be sufficient to bring the train or engine to rest.

When working the brake with two engines coupled together, the driver of the leading engine must take charge of the brake, and work it as he would on an ordinary train, not considering the second engine except as a vehicle. Should the leading driver find any difficulty in getting the brake to go on, he should at once put his brake-handle into full on position and keep it there until the train comes to rest.

The driver of the second engine must shut the tap, which is fixed under the driver's valve, thus closing all communication between his main reservoir and train pipe, and this tap must be kept closed, and the brake handle kept in the neutral position until the first engine is uncoupled from the train, or it is necessary for him to apply the brake. Should, however, the second engine be fittted with the equalising driver's brake valve, the handle must be kept in full release instead of neutral position.

When the second engine has not a tap below the driver's valve, the driver must put his handle into neutral position and keep his pump working.

Should it be necessary for the driver of the second engine to apply the brake he must bring his handle into full on position and keep it there until the train comes to rest, but the tap below the valve must not be opened.

Should the leading engine be detached, the driver of the second engine must then take charge of, and work the brake in the usual way, but before he opens the tap, he must make himself sure that his main reservoir has been fully charged with the maximum pressure of air.

Should the driver discover any defect in the working of the brake which would render it ineffective, he must at once give the guard notice, and arrange with him as to the use of the hand-brake in the vans, if necessary.

The driver on finding that the brake has been applied by the guard, or automatically, must at once aid in stopping the train by putting the brake handle into neutral position, thus preventing any escape of air from the main reservoir.

Drivers must immediately report any failure or irregularity in the working of any part of the brake apparatus.

Drivers must be careful to prevent oil or grease coming in contact with the hose pipes and other

rubber connections and, when coupling the hose, must not bend one pipe more than the other.

Drivers will be held responsible for any unreported defect in the brake apparatus on any engine of which they may have had charge.

The Westinghouse brake on goods engines must only be used when working passenger trains.

Guards.—Before starting a train from a terminus, or from any place where an attachment or detachment has been made, guards must see that all the brake couplings are properly connected and the taps on the swan necks open; to ascertain that this is the case they must make a reduction of not less than 5 or more than 8 lbs. of air, by opening the tap in the van, but should the van not be the last vehicle the reduction must be made from the rear tap of the train.

This test must be made as soon as possible after the train has been made up.

When a guard has occasion to apply the brake from his van, he must open the tap provided for that purpose and allow the air to escape until the train is brought to rest. Any sudden opening or closing of the tap is likely to cause damage to the train. The guard must only apply the continuous brake in cases of emergency.

Guards must see that the taps in each van, and at the rear of the last vehicle of their train are shut before the engine is attached, so as to avoid any waste of air-pressure.

Guards must in all cases screw the hand-brake clear off and chain it before starting.

Each guard of the train must be on the look-out, and must make use of his hand-brake to assist the driver in stopping, and must also apply the continuous brake in case of emergency.

Guards must enter on their reports all cases of irregularity in the working of the brake, giving at the same time the number and description of the vehicle at fault, the number of the engine working the train, and when possible the nature of the failure.

The head guard of a train fitted with the Westinghouse brake, must, before starting, and at places where engines are changed, inform the engine driver what number of vehicles there are on the train, and must keep him advised when from any cause the brake cannot be worked upon the whole of the vehicles composing the train.

Carriage Brake Inspectors.—The carriage brake inspectors must see that the brake connections are perfect, the hose couplings properly united, and the cocks on the pipes open, except that at the rear of the last vehicle.

The brake blocks must be uniformly adjusted, so that the pistons of the brake cylinders do not travel too far, and all joints must be kept tight.

The brake cylinders, triple valves, and other parts of the brake apparatus must be carefully inspected, and attended to when necessary.

The carriage brake inspectors should see that the brake is in good working order on all vehicles of a train, by having the brake applied and released from the engine, and must inform the driver of the number of vehicles in the train on which the brake can be worked, and also the number of "piped" vehicles.

Brake Fitters.—When any part of the brake apparatus on an engine is reported by the driver as being out of order, the shed brake fitter must have it attended to, and the brake tested before the engine goes out again.

The brake apparatus on engines and tenders in regular working must be thoroughly examined by the shed brake fitters at least once a month, and on spare engines twice a month.

General.—Firemen, guards, shunters, and others who may detach an engine or vehicles from a train must first observe that the brake has been released from the engine, otherwise they will have to release the brake by hand, by pulling the wire attached to the release valve under each vehicle.

The tap at each end of every vehicle in a train, except that at the rear end of the last vehicle, must be opened directly after the hose couplings have been united; and before the pipes between any two vehicles are disconnected, the tap on each side must be closed.

Should it be necessary to put the brake out of operation on a vehicle, this must be done by closing the tap between the main pipe and triple valve under the vehicle. The 1-in. tap at the end of the main pipe must not be closed (unless there is a defect in the main pipe or couplings) as communication between the engine and those vehicles in the rear of the tap thus closed would thereby be stopped.

No person must be allowed to tamper with any of the taps in the train.

Hose couplings must not be pulled apart, but must be uncoupled by hand in the proper way.

H. Tennant,
York, July 1890. *General Manager.*

Vacuum Automatic Brake.

General Description.

This brake stops the train by the application of brake blocks to the tyres, in the same way as the ordinary hand brake. The levers, however, which apply the blocks, are moved by a piston, working in a cylinder, this piston deriving its power from the pressure of the atmosphere.

The brake is continuous, each vehicle carrying its own brake cylinder connected to a pipe, running from end to end of the train, and it is through this pipe that the action of the brake cylinders is controlled.

An ejector placed upon the engine exhausts the air out of the continuous pipe and each cylinder. The brake is applied by the admission of air into the train pipe, and released by the withdrawal of the same through the ejector.

The brake can be applied by the guard, and is self-acting in the case of an accidental parting of the train, or any damage happening to the brake itself.

Instructions as to its proper Working.

Drivers.—The ejector handle must first be placed in the "running" position, as marked on the disc; the steam valve attached to the boiler must then be opened and kept open as long as the brake is in use.

The small ejector steam cock must next be opened, gently at first, and then sufficiently to obtain at least 18 inches of vacuum. When the engine is attached to a train, this cock requires to be regulated, as to open it too much or too little will prevent the ejector making the required amount of vacuum.

The steam valve must be closed before lubricating the steam disc, which must only be done by unscrewing the small oil screw on the top of the ejector.

When the engine is working by itself the driver must see that each coupling is placed on the dummy plug near it, and when attaching to a train, that the pipes between the engine and first vehicle are properly coupled.

Before attaching or detaching vehicles, drivers must in all cases destroy the vacuum, by putting the brake full on, as otherwise the couplings cannot be separated or taken off the dummy plugs.

Drivers must move the handle gently in the direction marked "on" until from 5 in. to 10 in. of vacuum is destroyed, as shown by the gauge: this will apply the brakes with gentle force to the wheels. The pressure of the blocks on the wheels can be increased by letting more air into the main pipe, or decreased by bring the handle into such a position as to cause the small ejector to increase the vacuum.

Should the engine be fitted with the apparatus for working the brake on the train only, the Westinghouse brake must be applied on the engine before the vacuum is applied on the train.

In cases of emergency the handle must be put right over into "on" position and kept there until the train comes to rest.

To avoid skidding the wheels, great care must be taken to apply the brake lightly for ordinary stops.

To release the brake the handle must be put into "running" position, but should this not be rapid enough the handle must be pushed in the direction marked "off," and so admit steam to the large ejector, which creates vacuum more quickly.

When stopping at stations, the brake must be so applied that the train will be brought to rest without rebounding.

The driver of a train running direct or backing into a platform with a buffer-stop at the end or to a platform where another train is standing must do so cautiously, and at a proper distance from the place where the train has to come to a stand must test the continuous brake and then run forward under the control of the hand-brake only, not using the continuous brake except in case of emergency.

When approaching any principal station or junction where the train has to stop, and also when moving up to attach the engine to a train, the driver must not rely upon the continuous brake, but must so regulate the speed of his engine that the ordinary application of the hand brakes on the engine and tender will be sufficient to bring the train or engine to rest.

When working the brake with two engines coupled together the driver of the leading engine must take charge of the brake, and work it as he would on an ordinary train, not considering the second engine except as a vehicle.

Should the leading driver find any difficulty in getting the brake to go on, he should at once put his brake handle into "on" position and keep it there until the train comes to rest, according to the latter clause of Rule 5.

The driver of the second engine must keep the steam shut off from his ejector, and place the handle in "running" position, where it must remain so long as the brake is worked from the leading engine.

Should it be necessary for the driver of the second engine to apply the brake, he must put the handle right over into "on" position, and keep it there until the train comes to rest.

Should the leading engine be detached, the driver of the second engine must take charge of the brake and work it in the usual way.

Should the driver discover any defect in the working of the brake, which will render it ineffective, he must at once give the guard notice and arrange with him as to the use of the hand brake in the vans, if necessary.

The driver must see that the engine brake is kept properly adjusted, and must immediately report any failure or irregularity in the working of any part of the brake apparatus.

Drivers must be careful to prevent oil or grease coming in contact with the hose pipes, and other rubber connexions, and, when coupling the hose, must not bend one pipe more than the other.

Drivers will be held responsible for any unreported defect in the brake apparatus on any engine of which they may have had charge.

Guards.—Before starting from a terminus, or from any place where an attachment or detachment has been made, the guard must see that all the brake couplings are properly connected, and that the coupling at the rear of the last vehicle has been placed on the dummy plug provided for the purpose; he must also look at the gauge in the rear van, and see that it registers not less than 18 inches of vacuum.

When the guard has occasion to apply the brake from his van he must press down the handle of the valve and keep it open until the train comes to rest, but this must be done carefully, as a sudden opening of the valve may cause damage (the valve opens antomatically when the brake is applied suddenly by the driver, and insures rapid action). The guard must only apply the continuous brake in cases of emergency.

Guards must in all cases screw the hand brake clear off and chain it before starting.

Each guard of the train must be on the look-out and must make use of his hand-brake to assist the driver in stopping and must also apply the continuous brake in case of emergency.

Guards must enter on their reports all cases of irregularity in the working of the brake, giving at the same time the number and description of the vehicle at fault, the number of the engine working the train, and when possible, the nature of the failure.

The head guard of a train fitted with the vacuum automatic brake must before starting, and at places where engines are changed, inform the engine driver what number of vehicles there are on the train, and must keep him advised when from any cause the brake cannot be worked upon the whole of the vehicles composing the train.

Carriage Brake Inspectors.—Carriage brake inspectors must see that the brake connexions are perfect, that the hose couplings are properly united, and that the hose pipe at the rear of the last vehicle is placed on the dummy plug provided for that purpose.

The brake blocks must be uniformly adjusted, so that the pistons of the brake cylinders do not travel too far, and all joints must be kept tight.

The brake cylinders, ball valves, and other parts of the apparatus must be carefully inspected and attended to when necessary.

The carriage brake inspector should see that the brake is in good working order on all vehicles of a train, by having the brake applied and released from the engine, and must inform the driver of the number of vehicles in the train on which the brake can be worked, and also the number of "piped" vehicles.

Brake Fitters.—When any part of the brake apparatus on an engine is reported by the driver as being out of order, the shed brake fitter must have it attended to and the brake tested before the engine goes out again.

The brake apparatus on engines and tenders in regular working must be thoroughly examined by the shed brake fitters at least once a month, and on spare engines twice a month.

General.—Firemen, guards, shunters, and others, who may have to detach an engine or vehicles from a train must first see that the brake is applied with full force by the driver, otherwise they will find great difficulty in separating the hose couplings.

When a train or vehicles have been detached from an engine, the disconnected coupling must not be placed on the dummy plug until all the brakes have been released, which must be done by pulling the wire (at either side of the vehicle) attached to the release valve.

After the brakes have been properly released the coupling must be placed on the dummy, as this keeps the internal parts free from dirt, &c.

H. TENNANT,
York, July 1890. *General Manager.*

NORTH LONDON RAILWAY.

INSTRUCTIONS FOR WORKING THE VACUUM AUTOMATIC BRAKE.

The Brake can be applied throughout the Train by the Driver from the Engine, or by the Guards from either Van.

Engine drivers.—Before starting, the driver must see that the gauge indicates *at least* 20 *inches of vacuum*, and that not less than 18 inches is *maintained* during the journey and while standing at stations. The vacuum is created by admitting steam to the small ejector by means of the steam valve on combination ejector.

The small ejector must be kept at work *continuously* to maintain the vacuum.

To apply the brake, move the handle on combination ejector in the direction marked "*Brake on.*"

To release the brake, move the handle in the direction marked "*Brake off.*"

In ordinary running this handle must stand at "*Running position.*"

The small ejector steam-valve must not be closed without first destroying the vacuum, by applying the brake.

The ejector drip pipe, and the drip valve on train pipe, must be kept clear and free from dirt.

When in the shed, the hose and train pipe under the engine should be examined, and if water is found within, it is a sign that the back stop valves in the ejector require attention.

The driver's vacuum gauge has two pointers, the one on the left marked "*Train pipe,*" and the one on the right "*Vacuum chamber,*" both indicating the vacuum carried.

A drip trap is placed at the lowest part of the train pipe, so that any moisture may drain into it. The valve at the bottom of this trap must be examined and cleaned every shed day.

Should the small ejector alone fail to maintain 20 inches vacuum the driver must report it, and call the attention of the shed foreman, who must put it right before the engine again goes out.

The driver must see that all hose-pipes between the carriages and the engine are properly coupled together, and that the coupling on the rear van is placed on the plug when the engine is detached.

Guards.—When the guard has occasion to apply the brake, he must press down the handle on the valve placed in the van. This admits air throughout the train pipe, and is only to be employed in *cases of emergency.* The valve in the van opens automatically when the brake is applied *suddenly* by the driver, and ensures rapid action. *Before starting* his train the guard must see, by the gauge in his van, that a vacuum of 20 *inches is maintained*, or report otherwise to the driver.

He will also be responsible (with the engineman) for seeing that all the hose-pipes between the carriages and the engine are properly coupled together, and that the coupling on the rear van is placed on the plug when the engine is detached, and also before starting the train.

The front guard must see that the hose-pipes between the front brake van and the engine are attached before starting the train.

In the event of a train parting, the guard in the rear portion must at once apply his hand brake, and keep it tightly on until the train is again coupled to the engine.

If the guards find it necessary to call the driver's attention to the fact that the vacuum is below 18 inches, they must do so by slightly applying the brake. This will immediately call the driver's attention to the state of the vacuum gauge.

Empty Trains Standing in Sidings.

After a train has been shunted and the train pipe detached from the engine, the wire under each coach must be pulled by the guards to allow the brake to run off; the train pipe coupling must then be replaced on the block, in order to exclude damp from the train pipes and cylinders.

This order does *not* apply to empty vacuum trains stabled in Devons Road sidings, which are under the care of the Carriage Department men as heretofore.

Guards must put on the two large brake wheels for trains standing in sidings, *in addition* to using the scotches which are carried in the vans.

If, however, trains are left standing on an incline, the carriage next each van, and *not* the vans themselves, should be scotched, as the skidding wheel of the van would remove a scotch from the rail.

General Instructions.

To release the brake for shunting purposes (the engine having left the train), first see that the hose-coupling at one end of the train is off the plug, then pull the wire or cord fixed under the frame of each carriage. This admits air to the top side of the cylinder, and the brakes fall off.

To couple the pipes take one in each hand and lift them sufficiently high to hook the bottom horns of the couplings together first, and then by lowering them, place the top horns of the couplings in the slots.

To uncouple the pipes simply lift them straight up, when the horns at the top will come out of the slots and the couplings separate.

See that all the pipes, joints, and couplings are air-tight, that the levers are regularly adjusted (to allow for the wear of the blocks), and keep the blocks clear of the wheels.

See that the piston rods are kept clean. This should be done by wiping with a dry cloth. *No oil or grease must ever be used.*

Should the brake on any vehicle become disabled, or the piston stick, disconnect the piston rod of vacuum cylinder by removing the pin of brake shaft lever.

In the event of failure of the vacuum brake *on the engine*, the driver must at once whistle in the usual way for the brake, when it will be the duty of either guard (or both) to apply and hold down the vacuum brake handle in the van until the train is brought to a stand.

G. Bolland Newton,
General Manager.

Broad Street Station,
March 18th, 1892.

NORTH STAFFORDSHIRE RAILWAY.

Instructions for Working the Automatic Vacuum Brake.

The automatic vacuum brake is continuous throughout the train, each vehicle carrying its own brake power. Should a train fitted with this brake become divided when running, the disconnections of the hose-pipe will cause the brake to go on throughout each portion of the train.

The brake power available depends upon the amount of vacuum maintained by the driver, and not less than 18 inches vacuum must be maintained in the rear van of the train whilst in motion.

The brake is applied by the driver admitting air to the main train pipe, and this can also be accomplished in case of emergency by the guard pressing down the lever of the valve fixed on the iron pipe in the van.

When a sudden application of the brake is made by the driver the valve in each guard's van will open automatically, thereby admitting air to the main train pipe, thus ensuring a rapid application of the brake.

There is a gauge in each guard's van showing the amount of vacuum in the train pipe and in the reservoir underneath each carriage.

The brake is released by the driver re-creating the vacuum throughout the train, and when the engine is detached the brake can be released by pulling the wire which will be found underneath the carriage frame, and which must be held back until the brake is fully off. Care must be taken to see that the hose-pipe is taken off the plug at one end of the train.

Whenever the pipes between the vehicles are disconnected the couplings must be placed on the plug at each end of the vehicles.

The engine having been hooked on to the train, and the hose couplings between the tender and the train, also those between the coaches connected, and the one at the end of the train placed upon the plug, the driver will admit steam to the large or small ejector to exhaust the train pipe and cylinders to a vacuum of 22 inches, which must be maintained throughout the journey and whilst standing at stations, the small ejector only being used in case of the air pump failing to act.

To apply the brake, the driver admits air to the train pipe by opening the brake-valve.

To release the brake the driver will close his brake-valve and admit steam to the large or small ejector.

When the brake is applied, the pressure of the brakes on the wheels may be increased or diminished at pleasure without removing them, and also without reducing the full reserve power which is always at command for an emergency stop.

Station stops should not be made by violent application of the brake, but by a destruction of vacuum of from 5 to 10 inches, which should be re-created slowly as the train comes to a stand, in order to prevent jerking at the end of the stop.

To apply the brake quickly the driver must open the brake-valve to the full extent.

The guard can apply both the steam and vacuum brakes by pressing down the handle of the valve placed in the van, but this must only be done in extreme cases of emergency.

The guard must see whilst running or standing at stations that a vacuum of at least 18 inches is maintained in the van, or report otherwise to the driver.

It will be the duty of the guard to see that the couplings between the carriages are properly connected, and that the coupling of the last coach is placed on the plug.

To release the brake for shunting purposes (the engine having left the train) first see that the hose coupling at one end of the train is off the plug, then pull the wire underneath the frame of each carriage which must be held back until the brake is fully off.

In approaching terminal stations, stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, at which the train has to stop, enginemen must test the continuous brake before passing the distant signal and the speed of the train must be reduced by it; and the engine must always enter such stations (or a dead end bay at any station) at such a speed as to enable them to stop the train at the proper place by the application of the ordinary hand brake only, and the automatic vacuum brake or steam brake must only be used in cases of emergency. Guards must watch the speed of the train and assist the engineman by the use of the hand brake when necessary. Unless the continuous brake is working properly when thus tried, the engine driver must whistle for the guard's hand brake, and inform the guard as early as possible that the continuous brake is out of order, and the hand brake must be relied upon for working the train. Special care must then b taken in approaching stations at which the train has to stop.

In the event of a train parting, the guard in the rear portion must at once apply his hand brake, and keep it tightly screwed on until the train is again coupled to the engine.

Each van is fitted with a hand brake, to be applied by the guards, in case the vacuum brake fails.

The vacuum brakes throughout the train being under control of the driver, the use of the "*hand brake*," in the vans is not required in making an ordinary stop. But guards must be prepared to apply the "*hand brake*" immediately on its being called for by the driver's whistle.

The driver will before starting from a terminal station, and also before leaving any station where a vehicle has been attached or detached to the train, test the vacuum brake, and the guard in charge of the rear van must see that the indicator in his van shows not less than 18 inches of vacuum, and signal the driver that it is so, by *shewing him* a *white flag by day* and a *white light by night*, which must be repeated by the driver giving a *hand signal* to the Guard by day, and showing him a *white light by night*.

W. D. PHILLIPS,
General Manager.

Stoke Station,
January 1893.

SOMERSET AND DORSET JOINT RAILWAY.

WORKING OF VACUUM AUTOMATIC BRAKE.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Drivers' Instructions.—Before starting, see that your gauge indicates 21 inches of vacuum. This is done by admitting steam to the small ejector by means of a steam cock placed for that purpose. The small ejector must always be kept working, whether the engine is attached to a train or not. To apply the brake, move the lever on the combination ejector to "*brake on.*" In ordinary running, this lever must stand at "*running position.*" To release the brake, move the lever to position "*brake off*," and restore the vacuum to the same amount as before the application. When the vacuum is suddenly destroyed in the main pipe, the brake is full "*on.*" When separated from your train, see that the couplings are placed upon the dummies fixed for that purpose, and when attached to a train, that the pipes between the engine and the next vehicle are properly coupled up.

Guards' Instructions.—To apply the brake, press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is only to be employed in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between the carriages are properly coupled together, and that the couplings on the end coaches are placed upon the dummies. See by your gauge that a vacuum of 21 inches is maintained. Report otherwise to the driver.

General Instructions.—To release the brakes for shunting purposes (the engine having left the train), first see that the hose coupling at one end of the train is off the dummy, then pull the cord which is fixed under the body of each carriage as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes come off by gravity.

NOTICE TO ENGINEMEN AND FIREMEN.

Testing of Brake Apparatus on Engine and Tender.

It is the duty of enginemen in every instance, before taking their engine out of the shed, to test the brakes on both the engine and tender, as directed below, so as to satisfy themselves that they are in efficient working order.

AUTOMATIC VACUUM BRAKE.

Before leaving the shed or starting on a journey, the driver must test the action of both the large and small ejector, each in its turn separately, and satisfy himself that the joints of the pipes on the engine are tight, and the ejectors in working order. Should the fall of vacuum be very rapid, the joints must at once be examined to discover the leakage, and in order to draw out any water that may have accumulated in the engine or tender brake pipes, the engineman, both before leaving the shed and on his return at the end of his day's work, must take off the hosepipe coupling from the dummy and use the large ejector freely, which can be done by putting the handle over to "On." All drain valves and pipes in connection with the brake apparatus must be kept free and in working order.

Enginemen must always test the continuous brakes, and ascertain for themselves if they are in good

working order when the engines are coupled up to the train, and immediately before starting on a journey.

S. W. JOHNSON,
Derby, Loco. Superintendent.
12th August 1885.

SOUTH-EASTERN RAILWAY.

AUTOMATIC VACUUM CONTINUOUS BRAKE.

The special attention of station masters, inspectors, engine drivers, firemen, foremen, porters, and guards is called to the following instructions for working the vacuum brake :—

The working of the automatic vacuum by the engineman does not relieve the guards from any responsibility. They must keep a good look-out, and be prepared to apply the hand brakes should any necessity arise.

When vehicles fitted with a continuous air brake are left in sidings or at stations, the brake pipes of each vehicle must be placed on the dummies provided for the purpose, and not left hanging loose. Porters and others are cautioned that in passing between vehicles *they must not step upon the brake pipes*, nor in any way interfere with the connections; also when coupling or uncoupling the brake pipes must be careful not to have any waste or anything else in their hands that would be likely to be drawn into the pipes by the suction of the vacuum.

The hand brakes are always to be applied by the guards whenever the train is stopped by signal, or at any intermediate station other than where appointed to call.

Station masters, inspectors, and foremen must give special attention to the proper coupling of the continuous brake pipes, and make such arrangements as will prevent these pipes being in any way improperly used.

The guards *must see* that the pipes of the continuous brakes on their trains are properly coupled together *before starting*, and whenever any engine or vehicle is attached or detached; and they must, frequently during the journey, examine the pipes and ascertain they are in good order, and remain properly coupled together.

Guards are required to enter on their journals *whether their trains were worked with the continuous brake*, also give full particulars of any defect, failure, or unsatisfactory working of the brake of their trains, or any portion of the fittings, couplings, &c.

Drivers must not depend on the brake until they have tested and found it to work properly. For this purpose they will test the brake before starting and also wherever the engine is changed. Engine drivers must, before passing the distant signals for stations where the train has to be stopped, or at STATIONS *and* JUNCTIONS WHERE THE SPEED HAS TO BE REDUCED, *try the brake to see that it is in good working order. Occasionally during the journey, and when descending sharp inclines, the continuous brake must be tried by the engine driver to ensure it being in perfect working order.*

At terminal stations the ordinary stopping must be done by the hand brakes, and the vacuum brake only used by the driver when he sees that the hand brakes will fail to stop the train at the proper place. No train must be allowed to travel between the distant signal and any terminal station at a higher rate of speed than will admit of the train being stopped by the hand brakes.

Except in case of emergency, the "vacuum" brake must not be used for stopping the continental trains when running from the main line to the Folkestone Harbour branch at Folkestone, or when running trains to the Admiralty pier at Dover. The train must be brought to a standstill by the hand brakes.

Trains fitted with the automatic brake standing in sidings.—During frosty weather, the automatic brake upon all trains when placed in sidings must be released.

CALEDONIAN RAILWAY.

Description and Instructions as to the working of Continuous Automatic High-pressure Air Brakes for Passenger Trains.

THE WESTINGHOUSE SYSTEM.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each vehicle of the train is fitted with the following parts:—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston-rods; the latter in connection with (4) the brake lever and blocks. Upon the engine a main reservoir also is fitted.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle, but in the main reservoir the pressure is about 10 lbs. in excess of that in the train.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valve to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, re-charges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top or steam cylinder is kept well lubricated; (2) that the air cylinder is sparingly lubricated with a small quantity of paraffin —*tallow or oil must not be used in the air cylinder;* (3) that the pump shall be *constantly run*, but never faster than is necessary to maintain the required air pressure; and (4) *that air of 75 lbs. pressure is carried.*

For ordinary stops the brakes should be applied lightly by turning the handle of the driver's valve to the right, and gently closing it again, after a reduction of pressure in the brake pipe of not less than 5 lbs. nor more than 8 lbs. has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly. Just before coming to a stand the brakes should be released, so as to avoid any jerk.

Drivers must exercise care and moderation in applying the brakes for ordinary stops, so as to bring their trains to rest without inconvenience to the passengers, and the brakes must not be used with more than half their full force, except in cases of emergency.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air. *In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.*

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge.

In releasing the brakes the handle must be moved quite against the stop, and kept there for about *ten seconds*, and then moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake valve towards the right, thus preventing escape of air from the main reservoir.

Drivers and firemen are *at all times* responsible for having the couplings between the engine and the first vehicle of the train properly connected, and for seeing that the cocks in the brake pipe are open; and before starting, and at intermediate stations where the composition of the train has been altered, they must ascertain from the guard the number and position of the brake-fitted vehicles connected with the engine, and be guided on the journey in the application of the brake accordingly. Also, before attaching to a train, the air must be raised to the full pressure at which it is to be worked during the journey, and, after attaching, the brakes must be applied with full pressure and taken off, in order to properly test the several pipes and connections. This operation to be repeated after the guard tests the brake from the van, to ensure all the brakes coming properly off.

Drivers must be careful to drain the water out of the main reservoir and drip cup once a week, especially in winter time.

If vehicles, having different air pressures, be coupled together, the brakes will apply themselves on those which have the highest pressure. Drivers should, therefore, keep the handle of their brake valve in the neutral position until their train is all coupled up. To ensure the certain release of all the brakes in the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train, and then put the handle of his brake valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they should at once be taken off by opening the release valves from the brake cylinders.

When approaching *terminal stations*, particularly on *falling* gradients, *great care* must be exercised to have the train so under control with the air brake, that, if required, it can be stopped by the *tender hand brake only* before the engine *reaches* the *station buffers.* This must also be very carefully observed in the case of trains that arrive in *docks*, and behind other trains in through stations.

Pilot engines assisting in front must be coupled to the train engine as closely as practicable, and the driver of the leading engine must not put on steam until the steam of the train engine is on, whether this may be in starting or for the purpose of increasing the speed after the steam has been shut off, neither must the tender brake of the leading engine be applied until the train brake is on, and when it is applied, it must not be released until the train brakes are entirely off.

In all cases of two engines being coupled together and fitted with the Westinghouse brake, the brake couplings must be connected, and the driver of the leading engine take full control of the brake power of the train; and the driver's valve of the *train engine* must be placed and *remain in the neutral* position, so as to cut off the communication from the main reservoir of that engine to the train pipe.

The indicator on the train engine will then only show the pressure the leading engine is maintaining in the train pipe. It is essential that the *pressure* in the main reservoir of the *train engine* be *kept above* that in the *train pipe*, otherwise the brakes will apply themselves by air escaping from the train pipe past the driver's valve to this main reservoir.

The air pump of the train engine must, therefore, be kept slowly and steadily working, independent of the pressure shown on the indicator.

The driver of the train engine to take no action in the ordinary stoppages, but he must be, at all times, prepared to apply the brake in cases of emergency.

Guards. — Before starting, and at intermediate stations, where the composition of the train is altered, guards must, in order to guide them on the journey in the application of the brake, make themselves thoroughly aware, personally, of the number and position of the brake-fitted and pipe-fitted vehicles in the train, and must go forward to the driver and give him this information. When there is more than one guard with the train, this will be the duty of the head guard.

Guards must be prepared to apply their hand-brakes as efficiently as possible on being warned by the driver by whistle, and they must not be taken off until the driver gives the whistle "Brakes-off," or until all the vehicles of the train have completely come to a state of rest—including the rebound, if any, of the carriage buffers—and when the hand-brake is being released it must not be allowed to fly off, but must be taken off slowly.

In all cases of trains arriving at terminal stations and in docks, and behind other trains in through stations, guards must apply their hand brakes as far as is necessary to assist in stopping at the proper place.

Guards, when they have occasion to apply the continuous brake from their van, must open the tap and allow the air to escape until the train is brought to a stand, but they should only use the continuous brake in cases of emergency.

Guards must in all cases take the *hand brakes clear off* before starting.

General.—Testing of Brake.—To ensure that the carriages are properly connected, and that the stop-cocks between the engine and the rear vehicle of the train are all open, a test must be made before starting from a terminal station, and after any vehicles are attached or detached on the journey, and after a fresh engine is attached, in the following manner, viz.:—

The guard in charge will allow the air to escape from the tap in the rear van, until the pressure is reduced by at least 10 lbs., after which the pressure should again rise to at least 40 lbs., indicating that the pipes are properly connected and open throughout, and the guard must note the pressure in his journal.

If the air pressure does not rise, the guard will exhibit a red signal to the driver, and both driver and guard must then ascertain what is wrong, and, after putting it right, have the brake again tested.

When the pressure does rise, the guard will exhibit a white signal to the driver until it is acknowledged by the latter giving a signal by hand during the day and by a white light at night. The driver must thereafter apply the brake with full force from the engine, allow it to remain on for about 10 seconds, and then release it quickly. This is done to ensure that the brakes are properly released from all the

vehicles after the test is made by the guard, and the driver must not start the train until the white signal is given by the guard and acknowledged by him.

The test should be made five minutes before the departure of the train, and the signal for starting the train must not be given by the guard until this has been done.

The white and green signals must not be exhibited together.

Should there be a vehicle behind the rear brake van, air must be allowed to escape from the rear stop-cock of that vehicle sufficient to apply the brakes on the train, and, after this has been done, the test from the rear brake van, as described above must be made.

Cut-off Arrangement.—When necessary from any cause the brake of any vehicle can be put out of operation without affecting the working of the brake on the other vehicles of the train by closing the tap under the vehicle between its brake-pipe and triple valve.

When a driver or guard closes this tap, he must report the fact to the carriage examiner at the end of the journey, and the guard must note the same on his journal, giving number and class of vehicle, and reason for closing the tap.

It is the duty of the staff at stations where trains are made up, and where vehicles are attached or detached, to adjust the couplings and air pipes properly, and to be most particular in screwing all of the vehicles *tightly* together, and it is the duty of the fireman to attach the engine to the train before starting, and to detach it at the end of the journey. When the engine requires to be detached at any station for shunting purposes, it is the duty of the station staff to do so, and to do all attaching and detaching of the engine, except in cases of the staff being limited or otherwise engaged, when the fireman must perform the duty at the request of the person in charge. It is the duty of the fireman, when the engine is brought back to the train preparatory to starting, to attach it properly to the train.

Caledonian vehicles not fitted with the Westinghouse apparatus, but fitted with pipe for conveying air to the other vehicles of any train of which they may form a part, will be distinguished by having a *knob* on the handles of the cocks, which are on the main pipe at the ends of the vehicles, and must be carefully noted before starting trains from terminal stations, or intermediate stations where vehicles are attached or detached by the guard, who must inform the driver. The L. & N.W. vehicles so fitted have the end pipes painted red.

To prevent the valve in the guards' brake vans being tampered with, neither Company's servants (unless duly authorised) nor passengers must be allowed to travel in the brake vans, and those unoccupied must be locked up.

The main pipe is fitted with a stop-cock at the ends of each vehicle; the cocks are *open* when the handles are standing across or away from the pipe, and shut when the handles are up or alongside the pipe. *Upon no account must any train be started from a station without all of these cocks being open, except the cock on rear end of the last vehicle, and the one on the leading end of the front engine;* and when the train has to be separated for attaching or detaching, or taking off the engine, the stop-cocks where the separation is to take place *must be shut before* the flexible pipes are disconnected, and when the train is made up again the flexible pipes must be connected *before* the cocks are opened.

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder or pipes leading thereto, which is done by pulling a wire attached to both sides of the frame of the carriage. If the brakes are applied after the engine has been disconnected, they can be released as above or by again connecting to the engine.

Before detaching the engine or any vehicles, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause inconvenience in shunting. Under these circumstances, guards must give special attention to their hand brakes.

At stations where the composition of trains is altered, the staff must be careful to see that all the brakes are clear off, and no train must be allowed to leave with the air brakes on any part however slight. Drivers must stop if they feel the train is being retarded, and have the brakes properly released.

The pipes and joints must be tested with screw-key, where necessary, and kept air-tight, and, when leaks are discovered, they must be corrected, if serious, before the vehicle is again used.

The hose coupling, when not used for connecting the brake between two vehicles, must be attached to the hook provided.

Any defect occurring in the working of continuous brakes must be pointed out by the guards or drivers immediately on arrival at—

Carlisle,	Stirling,
Beattock,	Oban,
Carstairs,	Perth,
Edinburgh,	Dundee West,
Glasgow (Central),	Do. East,
Do. (Buchanan St.),	Forfar,
Gourock (week days),	Montrose,
Greenock (Sundays only),	Aberdeen.
Hamilton,	

to the carriage examiners at these stations.

In the event of a flexible pipe bursting on the journey, the guard will telegraph forward to the first carriage examining station to have a new pipe in readiness to replace the defective one. Any irregularities or special circumstances in the working of the brake, or defects in its action, must also be specially reported by the guard in charge, to his district superintendent, as well as on his guard's journal, giving every particular mentioned in the printed forms supplied for that purpose.

Carriage examiners should see (1) that the brake connexions are perfect and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double piston cylinders should each travel not less than two, nor more than 3¼ inches. Those of single piston cylinders should travel not less than four nor more than 6½ inches. (2) that the brake cylinders are perfect and lubricated at least every three months with *paraffin oil*, and (3) that the couplings and other parts are tight, and (4) that they always have on hand, at a convenient place, one or more flexible pipes, with couplings fixed, ready to screw at once on to any vehicle that may require such.

Stop-Cock Handles on G. and S.-W. Plant.—All G. and S.-W. vehicles, with folding end doors, have the handles for the Westinghouse stop-cocks of the main pipe standing the reverse way to those on other vehicles.

Guards must state in their journals whether the train has been worked by the Westinghouse or vacuum brake.

The Vacuum Brake.

Description.

The vacuum used to apply the brake is produced by an ejector placed on the locomotive. This ejector

is double, consisting of a large and a small one, the latter being placed inside the former. The large ejector is used for creating a vacuum, and the small one is worked continuously for maintaining the vacuum during the journey.

Each vehicle is fitted with—

1. A ball valve.
2. A supplementary reservoir, with
3. Diaphragm cylinder with piston rod or rods these are connected.
4. With the brake levers and blocks.

When a train is made up and ready to start, and also when it is running, a vacuum not less than 18 ins. stands equally in the main pipe, from end to end of the train, and in the supplementary reservoir, and on each side of the diaphragm piston of the cylinder.

The brake is applied by admitting air to the train-pipe, and the bottom side of the diaphragm piston of the cylinder.

This causes the ball valve between the train-pipe and the top side of the diaphragm piston of the cylinder to seat itself, and retain the vacuum in the top of the cylinder, and in the supplementary reservoir communicating with it, thus allowing the atmospheric pressure in the train-pipe to act on the diaphragm piston and apply the brake.

The brake is released by again producing a vacuum in the train-pipe and the bottom side of the diaphragm piston of the cylinder by the driver applying the ejector; or when the engine is detached, by moving the lever on the sole bar of the carriage from "auto" to "release." Vehicles which do not have a lever for this purpose, or have not "release" marked on quadrant, are fitted with a wire or cord fixed under the body of the carriage which must be pulled, thus allowing air to enter the supplementary reservoir and top side of the diaphragm and destroy the vacuum.

Instructions.

Drivers.—Before starting, must see that the gauge indicates at least 18 inches of vacuum, and that not less than this amount is maintained during the journey, and while standing at stations. The vacuum is created by admitting steam to the small ejector by means of the steam cock on combination ejector; the small ejector must be kept at work *continuously*.

In order that engine drivers, before starting from stations with trains fitted with this brake, may know when the brake connections are complete, the guard will give a red hand signal when all is ready for the vacuum to be created. The driver must not open the ejector while trains are being coupled up, nor until the guard, by exhibiting this signal, indicates that he may do so.

When the proper amount of vacuum has been indicated on the train pipe gauge in the rear van, the guard will give a white hand signal, and afterwards test it by opening the valve; the driver will then re-create the vacuum.

In ordinary running, the handle of the combination ejector must stand at "*running position.*"

Where two engines are attached to a train, the hose couplings between the engines must be connected, and the driver of the leading engine will be held responsible for the working of the brake.

It is the duty of the fireman, when the engine is attached to the train to connect the hose coupling on the engine to that on the train; and it is his duty when the engine is separated from the train to place the hose coupling of the front carriage on to the stopper provided for the purpose.

Guards.—Before starting from a terminal station, and at intermediate stations where the composition of the train is altered, must see that carriages fitted with lever on the sole-bar have such levers in the "auto." position, that the hose couplings are all connected, and that the one at the end of the train is placed upon the plug; and he must also inform the driver what brake-fitted and pipe-fitted vehicles are in the train.

To ensure that the brake is properly connected throughout the train, the following test must be made five minutes before the departure of the train from a terminal station, and after any vehicles are attached or detached on the journey, and after a fresh engine is attached, viz.:—

The guard in charge will exhibit a red signal to the driver, who in response will create the vacuum. If the train-pipe gauge in the rear van does not show 18 ins. of vacuum, the guard must continue to exhibit the red signal until the necessary vacuum is created. When the proper amount of vacuum has been created, the guard will give a white signal to the driver, and afterwards make a test by opening the emergency valve. The driver will then re-create the vacuum, and the guard must enter on his journal the amount of vacuum, which must not be less than 18 ins., and also record on his journal the amount of vacuum registered on the gauges occasionally during the journey.

When the guard has occasion to apply the brake he must open the emergency valve placed in his van and hold it open until the needle of the gauge goes back to zero. This is only to be employed in cases of emergency.

Guards must see that during the journey nothing is placed so near as to interfere with the lever of the emergency valve in the brake vans.

If, during the journey, the guard should notice anything wrong with the brake apparatus, or should the vacuum gauge show less than 18 inches, he must call the driver's attention by pulling the communication cord, and showing to the driver a green signal by hand lamp or flag. This will signify to the driver that the automatic brake must not be relied upon for pulling up the train at the next stopping station, and the guard must be prepared to assist the driver with his hand brake. In the case of trains not fitted with communication cord, the guard must apply his hand brake when approaching the next stopping place, in sufficient time to bring the train to a stand at the platform without the aid of the vacuum brake, and must advise the driver of the state of the train pipe gauge in his van before proceeding.

In foggy weather the driver must bring the train to a stand immediately the cord is pulled.

Any irregularity or special circumstances in connection with the working of the brake, or defect in its action, must be reported by the guard in charge on his journal. The carriage examiners must be advised at the next stopping station.

The continuous brakes throughout the train being under the control of the driver, the use of the hand brake in the vans is not required for ordinary stops, but guards must apply the hand brake immediately on its being called for by the driver's whistle, *and must in all cases use their hand brakes to stop trains on approaching terminal stations, dock sidings, or principal stations, and must not rely on the drivers pulling up trains by means of the vacuum brake.*

When shunting has to be performed on a rising or falling gradient the guard must leave his hand brake on.

In case of a train becoming divided the guard in the rear van must put the hand brake hard on before going back to protect his train.

General.—Vehicles fitted with a lever on the sole-bar must have that lever placed at the "Automatic" side of quadrant, unless when turned to "Cut-off" or "Release" for shunting purposes. When the brake gear of such vehicles is out of order from leakage or any other cause, the lever on the sole-bar must be

moved into the "*cut-off*" position. This will prevent the brake gear from working on that vehicle, but will not interfere with the brake on the remainder of the train.

Engines Nos. 83, 88, 89, 90, 91, and 113, stationed at Carlisle, and Nos. 410, 411, and 412, stationed at Polmadie, have been fitted, in addition to the Westinghouse brake for engine, with a combination ejector for working trains of foreign companies' carriages fitted with the vacuum brake.

When a train of foreign companies' stock, fitted with the vacuum automatic and not with the Westinghouse brake, has to be worked on any part of the line, one of these engines will be provided for it.

The end vacuum pipes of Caledonian vehicles which are fitted with vacuum pipes, but which have no brake apparatus operating on their wheels are painted a distinctive colour (red). The West Coast Joint Stock carriages and vans are fitted with the combined Westinghouse and vacuum brakes, the former for working over this company's line, and the latter for London and North-Western line.

Through Trains.—Scotland and England.—Down Trains.—Trains which have been worked into Carlisle by London and North-Western engines must have the vacuum destroyed on each vehicle in the following manner before the train is taken forward by a Caledonian Westinghouse engine :—

1st. Remove the pipe of vacuum brake from stopper on the end of rear vehicle.

2nd. Turn the lever on the sole-bar from "auto." to "release," and seen that the brake blocks come off.

3rd. When vehicles have a *release wire* in addition to having "auto." and "release" on the sole-bar, *such wire must be pulled* as well as the lever put into the release position, in order to destroy the vacuum in both cylinder and reservoir.

4th. When the quadrant is not marked "release," the vacuum must be destroyed by pulling the release wire on that vehicle, and also seeing that the brake blocks come off.

5th. Replace the pipe on the stopper at the end of the rear vehicle.

Guards must see, before starting from Carlisle, that the vacuum has been destroyed by examining the vacuum indicators in the vans.

The London and North-Western Company's fireman will leave the vacuum pipe off the stopper when he uncouples his engine from the train; and the Caledonian Railway fireman must put the vacuum pipe on the stopper when he couples his engine on to the train.

When there are any vehicles to detach at Carlisle from the front of the train, the Citadel station shunter must leave the vacuum pipe off the stopper of the front vehicle for the Caledonian line in the same way as the London and North-Western Company's fireman is required to do in the other case.

Up Trains.—Trains going South must have all the levers on the sole-bars placed in the "auto." position of the quadrants when the train *arrives* at Carlisle. In order that this may be carried out, stationmasters must arrange for their staff putting the lever of each vacuum-fitted vehicle in the "auto." position and release wire pulled before it is despatched from their station.

Vehicles off Highland Railway Trains.—Vehicles from the Highland line, fitted with the vacuum brake, and having a quadrant on the sole-bar, must have the vacuum destroyed in the same way as is done in the case of trains off the London and North-Western Railway.

All concerned must take care that nothing is allowed at any time to interfere with any apparatus in connection with either hand or continuous brakes, no matter whether vacuum or Westinghouse brake is being used at the time.

Vehicles for Severn Tunnel Route.—Not more than two carriages not fitted with vacuum brake are permitted on any passenger train through the Severn Tunnel.

GLASGOW AND SOUTH-WESTERN RAILWAY.

Notice.

Westinghouse Continuous Brake.

Description and Instructions for Working.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train is fitted with the following parts :—(1) a triple valve, (2) a supplementary air reservoir, and (3) a cylinder with piston rods; the latter in connection with (4) the brake lever and blocks.

When a train is made up and ready to start, and also when it is running, compressed air stands at about equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, in the triple valve and supplementary reservoir on each vehicle.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top, or steam cylinder is kept well lubricated, (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum,—other oils or tallow *must not be used in the air cylinder*,—(3) that the pump shall be *constantly run*, but never faster than is necessary to maintain the required air pressure,—and (4) *that air from* 50 *to* 60 *pounds pressure for stopping trains, and from* 70 *to* 80 *pounds pressure for express trains*, is carried.

For ordinary stops the brakes should be applied *lightly* by turning the handle of the driver's valve to the right, and *gently* closing it again, after a reduction of pressure in the brake pipe of not less than 5 lbs., nor more than 8 lbs. has been made. If the pressure runs up on the gauge when the handle is brought back, it shows that the valve has been shut too quickly.

In ordinary working the brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction is waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake pipe escape.

Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake pipe to make the same reduction per square inch on the gauge.

In releasing the brakes the handle must be moved quite against the stop to the left and kept there for about *ten seconds*, and then moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers must always satisfy themselves that the brake coupling on their engine is properly connected to that on the train, and that the *cocks in the brake pipe are open.*

Drivers, upon feeling that the brakes have been applied by the guard, or automatically, must at once aid in stopping the train by turning the handle of the brake-valve towards the right, thus preventing escape of air from the main reservoir.

The blocks of the driving wheel brake should be so adjusted by turning the screw that the pistons travel from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time.

If vehicles having different air pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train, and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train; and then put the handle of his brake-valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they should at once be taken off by opening the release valves from the brake cylinders, which ought to be *so arranged as to be worked from the foot-plate.*

After connecting the engine to the train, or after new vehicles have been added, the pipes and reservoirs are to be charged as quickly as possible.

Guards.—Before leaving the terminus, after adding to or detaching from a train on the journey, or on another engine being attached, the rear guard shall ascertain whether the couplings are connected, and the cocks in the brake pipe are all open throughout the train, by applying the brakes from his van and seeing that *they are released from the engine.* If the brake is not in use on the whole train, or if the van is not the last vehicle, the test should be made by opening the cock in the brake pipe of the last vehicle connected.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they should only use the brake in cases of emergency.

Guards must, in all cases, screw the *hand brakes clear off* before starting.

General.—Before detaching the engine or any carriages the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is again used.

The brake pipe has a tap at each end of every vehicle, all of which must be open when the couplings are united except the one at the rear of the train. *These taps must always be opened after connecting the hose couplings, and always closed before separating them.*

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder or pipes leading thereto. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brake of any vehicle can be put out of operation, without affecting the others, by closing the tap under that vehicle between the brake pipe and triple valve.

Inspectors should see (1) that the brake connections are perfect and properly adjusted for the wear of the blocks and wheels by being *uniformly* taken up. The pistons of double-piston cylinders should each travel not less than 2 nor more than 4 inches. Those of single-piston cylinders should not travel less than 4 nor more than 8 inches. (2) That the brake cylinders are perfect, and lubricated at least every three months with *mineral oil.* (3) That the hose couplings are united, and the cocks in the pipes are open; that is, the handles must stand across or away from the pipe, except the one at the end of the train, which must lie along the pipe in the shut-off position. (4) That the joints are all air tight.

Note.—No. 3 refers to traffic platform inspector or foreman, who will also see that the hose coupling, when not used for connecting the brake between two vehicles, must be attached to the dummy coupling.

Drivers and guards must at all times arrange to control their trains in approaching terminal stations by the ordinary hand brakes upon the tenders and brake vans, so as not to require the use of the air brakes, unless as an emergency brake, at such place.

W. J. Wainwright,
General Manager.

Glasgow,
26th December 1881.

The Vacuum Automatic Brake.

This brake can be applied throughout the train by the driver from his engine, or by the guard from his van.

Driver's Instructions.—Before starting see that your gauge indicates at least 18 inches of vacuum. This is done by admitting steam to the small ejector by means of a steam-cock placed for that purpose. To apply the brake, move the lever on the combination ejector to "On." In ordinary running this lever must stand at "Running position." To release the brake, move the lever to position "Off." *When the vacuum is suddenly destroyed in the main pipe the brake is full* "On." When separated from your train see that the couplings are placed upon the dummies fixed for that purpose.

Guard's Instructions.—To apply the brake, press down the lever on the valve placed in the guard's van. This admits air throughout the train pipe, and is to be only employed in cases of emergency. This valve opens automatically when the brake is applied with full force by the driver, and ensures rapid action. See that all pipes between carriages are properly coupled together, and that the couplings on the end coaches are placed upon the dummies. See by your gauge that a vacuum of 18 inches is maintained. Report otherwise to driver.

General Instructions.—To release the brakes for shunting purposes (the engine having left the train), first see that the hose coupling at one end of the train is off the dummy, then pull the cord which is fixed under the body of each carriage, as indicated by the arrows. This admits air to the top side of the cylinder, and the brakes come off by gravity.

GREAT NORTH OF SCOTLAND.

Westinghouse Continuous Brake.

Description and Instructions for Working.

Description.

The air used to apply the brake is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

The engine, tender, and each of the vehicles of the train is fitted with the following parts: (1) a triple valve, (2) a supplementary air-reservoir, and (3) a cylinder with piston-rods, the latter in connexion with (4) the brake-lever and blocks.

When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure throughout its length, that is to say, in the main reservoir, in the pipe from end to end of the train, in the triple valve and supplementary reservoir on each vehicle.

The brake is *applied* by a *decrease* of pressure in the main pipe. This causes the triple valves to move down, and to allow the air stored in the supplementary reservoirs to pass instantly into the cylinders, force out the pistons and rods, and cause the blocks to press against the tyres of the wheels.

The brake is *released* by an *increase* of pressure in the main pipe, by allowing air to pass from the main reservoir along the train. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

Drivers must see (1) that the top or steam cylinder is kept well lubricated; (2) that the air cylinder is sparingly lubricated with a small quantity of refined petroleum—*tallow or oil must not be used in the air cylinder*; (3) that the pumps shall be *constantly run*, but never faster than is necessary to maintain the required air-pressure; and (4) *that air from* 50 *to* 60 *pounds pressure for stopping trains, and from* 70 *to* 80 *pounds pressure for express trains*, is carried.

For ordinary stops the brakes should be applied lightly, by opening the valve and closing it gently when the pressure has been reduced from 4 to 8 lbs. on the gauge.

The brakes are fully applied when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air.

In releasing the brakes the handle must be moved quite against the stop, and kept there for about 10 seconds, and then moved back against the intermediate stop, which is the feed position, and *where it must remain whilst the train is running.*

Drivers, upon feeling that the brakes have been applied by the guard or automatically, must at once aid in stopping the train by turning the handle of the brake-valve towards the right, thus preventing escape of air from the main reservoir.

The blocks of the driving-wheel brake should be so adjusted, by turning the screw, that the pistons move up from 3 to 4 inches.

Drivers must be careful to drain the water out of the main reservoir once a week, especially in winter time. If vehicles having different air-pressures be coupled together, the brakes will apply themselves on those which have the highest pressure. To ensure the certain release of all the brakes in the train and also that trains may be charged quickly, the driver must carry the maximum pressure in the main reservoir before connecting to a train, and then put the handle of his brake-valve in the release position until the train is charged with air. If the brakes on the engine and tender thus apply themselves by being coupled to a train not charged, they should at once be taken off by opening the release-valves from the brake cylinders, which ought to be *so arranged as to be worked from the foot plate.*

Guards.—Before leaving the terminus, after adding to a train on the journey, or on another engine being attached, the rear guard shall ascertain whether the couplings are connected and the cocks in the brake-pipe are all open throughout the train, by applying the brakes from his van and seeing that they are released from the engine. If the brake is not in use on the whole train, or if the van is not the last vehicle, the test must be made by opening the cock in the brake-pipe at the rear of the last vehicle connected.

The hose coupling, when not used for connecting the brake between two vehicles, must be attached to the dummy coupling. It is important to observe that the taps at the ends of the vehicles are open when the handles stand across or away from the line of pipes, and closed when parallel to or alongside the pipe.

Guards, when they have occasion to apply the brake from their van, must open the tap and allow the air to escape until the train is brought to a standstill, but they should only use the brake in cases of emergency.

Guards must in all cases screw the *hand brakes clear off* before starting.

General.—Before detaching the engine or any carriages, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they should be corrected, if serious, before the vehicle is again used.

If the brakes are applied by the separation of the train, or the breaking of a pipe, they can be released by opening the small release valves in the brake cylinder, or pipes leading thereto. If the brakes are applied after the engine has been disconnected, they can be released as above, or by again connecting to the engine.

The brakes of any vehicles can be put out of operation, without affecting the others, by closing the taps under those vehicles, between the brake-pipe and triple valve.

Inspectors should see (1) that the brake connexions are perfect, and properly adjusted for the wear of the blocks and wheels by being uniformly taken up. The pistons of double-piston cylinders should each travel not less than 2 nor more than 4 inches. Those of single-piston cylinders should travel not less than 4 nor more than 8 inches. (2) That the brake-cylinders are perfect, and lubricated at least every six months with *mineral oil;* and (3) that the couplings and other parts are tight.

Special Notes.

When vehicles not fitted with a continuous brake, or having connecting-pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand-brake, and keep it tightly on either until the train has come to a stand or the driver has taken off his brake and is again going forward, as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars, which may occur when a powerful brake is applied to the front portion of the train only.

Drivers and guards must at all times arrange to control their trains in approaching terminal stations by the ordinary hand brakes upon the tenders and brake vans, so as not to require the use of the air brake unless as an emergency brake at such places.

NORTH BRITISH RAILWAY.

Westinghouse Automatic and Continuous Brake.

Description.

1. Compressed air is the agent employed to apply the brake. The air is compressed by a small engine and pump placed on the locomotive. The driver or any of the guards can apply the brake, *and it applies itself in the case of a break-away, or the failure of any of its vital parts.*

2. The engine tender and each of the vehicles of the train are fitted with the following parts:—(1) a triple

valve, (2) a supplementary air reservoir, (3), a cylinder with piston rod; the latter in connection with (4) the brake lever and blocks, and (5) upon engine a main reservoir is fitted.

3. When a train is made up and ready to start, and also when it is running, compressed air stands at equal pressure throughout its length, that is to say, in the pipe from end to end of the train, and in the triple valve and supplementary reservoir on each vehicle, *but in the main reservoir the pressure is about* 10 *lbs. in excess of that in the train.*

4. To apply the brake, air is allowed by the driver to escape, or, in an emergency, by any of the guards. This causes the triple valves to move down, the air stored in the supplementary reservoirs to pass instantly into the cylinders, the pistons and rods to be forced out, and the blocks to press against the tyres of the wheels.

5. To release the blocks from the wheels, air is allowed to pass from the main reservoir along the train, increasing the pressure in the main pipe. This moves the triple valves up, recharges the supplementary reservoirs, and at the same time allows the air which had forced out the pistons to escape into the atmosphere.

Instructions.

6. *Drivers* must see (1) that the steam cylinder is kept well lubricated, (2) that the air pump is sparingly lubricated with a small quantity of mineral oil,—tallow or lard oil must not be used in the air pump,—(3) that the pump is constantly run, but *never faster than is necessary to maintain the required air pressure,*— and (4) *that air of about sixty pounds pressure is carried.*

7. The brakes must not be used with more than half the full force, except in case of danger.

8. The brakes are fully set when the pressure shown on the gauge is reduced 25 lbs. Any further reduction would be waste of air. In case of emergency, however, the handle must be turned so as to let all the air in the brake-pipe escape. Long trains require more careful handling than short trains, and a greater quantity of air must be discharged from the brake-pipe to make the same reduction per square inch on the gauge.

9. To apply the brakes lightly, the tap must be partially opened and *gently* closed when the pressure has been reduced from 4 to 8 lbs.

10. In releasing the brakes the handle must be moved against the stop and kept there for about *ten* seconds, and then moved back against the intermediate stop, which is the *feed* position, and where it *must remain* until brake requires to be applied.

11. Drivers, upon feeling the brakes are applied by guard, or automatically, must at once aid in stopping the train by turning the handle of brake-valve towards the right into neutral position, thus preventing escape of air from main reservoir.

12. When coupling up to a train not charged with air, or to one having a less pressure than that on engine, the brakes of the latter will fly on, the higher pressure flowing into the lower having, of course, reduced the pressure in the train pipe. No inconvenience will result from this if the driver has been careful to come up to the train with maximum pressure in his main reservoir. The maximum pressure in the main reservoir *can only* be obtained by placing the handle of the driver's brake valve in the neutral position; the train pipe being then shut off, the pressure is increased only in the main reservoir. The brakes can be taken off by turning handle of brake valve from neutral to charging or release position, failing which, brakes can be released by opening valves on brake cylinders. Drivers should be careful not to leave more than 50 lbs. pressure in a train when junctions or terminal stations.

13. Pilot engines assisting in front must be coupled to the train engine as closely as practicable, and the driver of the leading engine must not put on steam until the steam of the train engine is on, whether this may be in the starting, or for the purpose of increasing the speed after the steam has been shut off. Neither must the tender brake of the leading engine be applied until the train brake is on; and when it is applied, it must not be released until the train brake is entirely off.

14. In all cases of two engines being coupled together and fitted with the Westinghouse brake, the brake coupling must be connected, and the driver of the leading engine take full control of the brake power of the train; and the driver's brake valve of the train engine must be placed and remain in the neutral position, so as to cut off the communication from the main reservoir of that engine to the train pipe.

15. The indicator on the train engine will then only show the pressure the leading engine is maintaining in the train pipe. It is essential that the pressure in the main reservoir of the train engine be kept above that in the train pipe, otherwise the brakes will apply themselves by air escaping from the train pipe past the driver's valve to the main reservoir.

16. The air pump of the train engine must, therefore, be kept slowly and steadily working, independent of the pressure shown on indicator.

17. The driver of the train engine to take no action in the ordinary stoppages, but he must be at all times prepared to apply the brake in cases of emergency.

18. Drivers must be careful to run the water out of the main reservoir and drip cup once a week, especially in the winter time.

19. The blocks of the driving wheels must be so adjusted by turning the screw, that the pistons only move up from 3 to 4 inches.

20. Drivers are hereby reminded of the following rule, as contained at page 141 of the book of rules and regulations, viz.:—

> *Rule* 267*a.* It is the duty of the engine-driver of a train provided with a continuous brake, before starting the train, and at places where the engines are changed, to ascertain from the head guard the number of vehicles there are on the train, and upon how many of them the brake can be applied, and when any vehicles are attached or detached on the journey, the engine-driver must ascertain whether the attaching or detaching of such vehicles will interfere with the working of the brake on the whole or a portion of the train, and if the latter, to what extent.

This rule does not apply to trains made up entirely of vehicles fitted with a continuous brake running daily with the formation unaltered and the brake complete. When, however, in such cases the formation is altered, or vehicles are attached or detached, the guard and the engine-driver must communicate with each other.

21. *Guards.*—On all trains provided with a continuous brake where there are more than one guard, the guard riding in the rear van for the time being will be held to be the head guard.

22. In order to prove whether the continuous brake is connected throughout, the guard in the rear van must, after the engine has been coupled on to the train, examine the pressure in the gauge, at the same time lifting the handle of the valve and ascertaining that air escapes. If the brake is not in use on every vehicle in the train, or, if the van is not the last vehicle, the test must be made by opening the cock in the brake pipe of the last vehicle connected, which must be one having the *brake apparatus complete.* (See clause 2.) These tests must be made on the following occasions:—(1) *Before commencing the journey*—invariably whether the train starts from a terminal or roadside station; (2) *On the journey*—invariably whenever vehicles are added to or taken off the train or any change is made in the engine or the engine is reversed.

23. Guards, when they have occasion to apply the continuous brake from a van, must hold the handle

and allow the air to escape until the train is brought to a standstill, but must only use the brake in case of emergency.

24. When any vehicles not fitted with a continuous brake, or having connecting pipes only, are attached to a train fitted with such brake, the guard in the rear van must immediately, upon the continuous brake being applied by the driver, apply his hand brake and keep it tightly on, either until the train has come to a stand, or the driver has taken off the continuous brake, and is again going forward, as the case may be. This arrangement is necessary to prevent the rebound of the carriages, which may occur with trains composed of vehicles when only partially fitted with continuous brake.

25. Guards must, in all cases, screw the hand-brakes clear off before starting.

26. Guards are hereby reminded of the following rule as contained at page 123 of the book of rules and regulations, viz. :—

> *Rule* 235*a*. The head guard of a train provided with a continuous brake must, before starting the train and at places where the engines are changed, inform the engine-driver the number of vehicles there are on the train and upon how many of them the brake can be applied; and when any vehicles are attached or detached on the journey, the engine-driver must be advised, and told whether the attaching or detaching of such vehicles will interfere with the working of the brake on the whole or a portion of the train, and if the latter, to what extent. This rule does not apply to trains made up entirely of vehicles fitted with a continuous brake running daily with the formation unaltered and the brake complete. When, however, in such cases the formation is altered, or vehicles are attached or detached, the guard and the engine-driver must communicate with each other.

27. *General.*—Before detaching the engine, the brakes must be fully released on the whole train. Neglecting this precaution, or setting the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting. The pipes and joints must be kept tight, and when leaks are discovered they must be corrected, if serious, before the vehicle is again used.

28. The brake pipe has a tap at each end of every vehicle, all of which taps should be open when the hose couplings are united, except the one at the rear of the train. These taps must always be opened *after* connecting the hose couplings and closed *before* separating them.

29. If the brakes are applied by the separation of the train, or by the breaking of a pipe, they can be released by opening the small release valve on the brake cylinders or pipes leading thereto, which is done by pulling a wire attached to both sides of frame of vehicle.

30. It is important to observe that the taps at the ends of the vehicles are open when the handles stand across, or away from the line of pipe, and closed when parallel to, or alongside, the pipe.

31. When the handle of the tap of the triple valve stands across, or away from the valve, it is set for the automatic brake. When against the stop at an angle of 45°, the brake is thrown out of use on the carriage. In certain class of fittings the brake of any vehicle can be cut off without affecting working of other vehicles on train, by closing tap under the vehicle between the brake pipe and triple valve. When an engine-driver or guard closes this tap, he must report the fact to carriage examiner at end of journey.

32. Care must be taken (1) that the brake connections are perfect and properly adjusted for the wear of the blocks and wheels; (2) that the brake cylinders are perfect and lubricated occasionally with *mineral oil*; and (3) that the couplings and other parts are tight.

Application of Westinghouse Brake.

The attention of engine-drivers and firemen is specially called to the following Standard Instructions issued by the Westinghouse Brake Company :—

> "Engine-drivers must exercise care and moderation in applying the brakes for ordinary stops, so as to bring their trains to rest without inconvenience to the passengers and to avoid damage to couplings.
>
> "To ensure this, it is necessary that the brakes should be applied moderately in the first instance at a distance of several hundred yards from the station. *Just before coming to a stand the brakes should be released*, so as to avoid any jerk, and the *hand brake* on engine or tender must be applied *to stop* and hold *the train*."

Engine-drivers and firemen are requested to carry out these instructions carefully; any failure to comply therewith will be seriously noticed.

BELFAST AND NORTHERN COUNTIES RAILWAY.

Arrangements for working Vacuum Automatic Brakes.

All trains working with the automatic brake are to be controlled by drivers only. The guards are not to apply these brakes except in cases of emergency.

When entering terminal stations these brakes will not be used; it will, therefore, be necessary for the drivers and guards to use the hand-brakes, as they have formerly been in the habit of doing.

Before starting, the vacuum gauges in engine and brake-van must indicate a vacuum of at least 15 inches, and this vacuum must be constantly maintained, excepting, of course, when air is admitted to apply the brakes.

On arrival at a terminal or other station where the vehicles are to be shunted or taken on by an engine not fitted with the automatic brake, it will be necessary to go to each vehicle in turn to leak the brakes off by pulling the wire placed under the frames for that purpose, before the vehicles can be moved.

The driver of a train provided with continuous brakes must be informed by the guard before starting, and at places where engines are changed, how many vehicles there are on the train, and upon how many of them the brake can be applied; and when any vehicles are attached on the journey the driver must be told whether the attaching of such vehicles will interfere with the working of the brake on the whole or any portion of the train, and if the latter, to what extent. The driver must see he gets this information.

When vehicles are supplied with connecting pipes only they must be considered as vehicles without brakes.

When vehicles not fitted with the continuous brake, or having connecting pipes only, are attached in rear of a train fitted with such brake, the guard in the rear van of such portion must, immediately upon the continuous brake being applied, apply his hand-brake, and keep it tightly on either until the train has come to a stand, or the driver has taken off the continuous brake, as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breakage of drawbars, which may occur when a powerful brake is applied to the front portion of a train only. Vehicles fitted with connecting pipe only should, when possible, be placed between the engine and carriages, or as near the engine as possible.

It is the guard's duty before starting to see that all pipes between the vehicles are properly coupled

together, and that the pipe at rear of last vehicle is placed on the iron plug fixed for that purpose to the train pipe.

Guards and drivers must report all irregularities in the working of trains fitted with the automatic vacuum brake.

Guards to note in journal, and drivers to note on mileage sheets trains worked with continuous brakes.

CAVAN, LEITRIM, AND ROSCOMMON LIGHT RAILWAY AND TRAMWAY.

Instructions for Working the Automatic Vacuum Brake.

The brake can be applied throughout the train by the driver from the engine or by the guard from the van.

Creating Vacuum.—The engine having been coupled to the train and the hose coupling between the tender and train, also those between the vehicles connected and the one at the end of the train placed upon the plug, the driver admits steam to the small ejector which will soon exhaust the train pipe and cylinders, to a vacuum of 20 to 24 inches, or the large ejector may be used if the vacuum is required to be obtained more rapidly. The small ejector must be kept at work continuously to maintain the vacuum.

Before starting the driver must see that the gauge indicates at least 18 inches of vacuum, and that not less than this amount is maintained during the journey and while standing at stations. The vacuum is created by admitting steam to the small ejector, by means of the steam cock on combination ejector.

To apply the brake, move the handle on combination ejector in the direction marked "Brake on."

To release the brake, move the handle on combination ejector in the direction marked "Brake off."

In ordinary running this handle must stand at "Running Position."

When the guard has occasion to apply the brake, he must press down the handle on the valve placed in his van. This admits air throughout the train pipe, and is only to be employed in cases of emergency. The valve in the van opens automatically when the brake is applied suddenly by the driver, and ensures rapid action. The guard must see by the gauge in his van that a vacuum of at least 18 inches is maintained, or report otherwise to the driver. He must also see that all pipes between the carriages and engine are properly coupled together, and that the coupling on the last vehicle is placed upon the plug.

Whenever the pipes between the vehicles are disconnected the coupling must be placed upon the stop plug at the end of the vehicle.

To release the brake for shunting purposes (the engine having left the train), first see that hose coupling at one end of the train is off the plug, then pull the wire or cord fixed under the frame of each carriage. This admits air to the top side of the cylinder and the brakes fall off by gravity.

To couple the pipes the guard or porter must take one in each hand, and lift them sufficiently high to hook the bottom horns of the coupling together first, and then, by lowering them, place the top horns of the couplings in the slots.

To uncouple the pipes the guard or porter must simply lift them straight up, when the horns at the top will come out of the slots and the coupling will then separate.

The responsibility for properly coupling up all vehicles rests with the station staff and the guard; and the driver is responsible for his engine being properly coupled up by his fireman.

Urban Broughton,
Traffic Manager.

CORK AND MUSKERRY LIGHT RAILWAY.

Trains with Patent Continuous Brake.

Vehicles (not being fitted with the apparatus) must be put at the rear of these trains, in order to preserve the continuity of the brake connexions in front.

Not more than four may be attached behind the guard's van, and proper couplings must, in all cases, be used, care being observed to have the usual tail lamp on the last vehicle.

Instructions to Engine Drivers.

Application of the Brakes.

Before starting at the beginning of each journey the train must be examined to see what number of brake-fitted vehicles are connected, and the number that are in the rear of the train not fitted with brakes, or, if fitted, are not under the control of the driver.

Ordinary stoppages must not be made too quickly, and to avoid this the brake must be applied slightly some distance from where the train is to be stopped, and the application of it gradually and uniformly increased until the train comes to a stand, and must at all times be released very cautiously, to prevent the jerk consequent on the rebound of the carriage buffers and the engine shooting ahead, and to avoid subjecting the couplings to undue strain, and the passengers to discomfort.

This method of application to be carefully attended to when there are vehicles in rear of the train not fitted with brakes, and in such cases it is the duty of the guard to apply the rear brake.

When approaching terminal stations, particularly on falling gradients, great care must be exercised to have the train so under control that, if required, it could be stopped by the tender brake before the engine reaches the station buffer-stop.

Drivers must satisfy themselves that the brake is at all times in good working order. Before starting from a terminal station they must never fail to put on the brakes, and notice if the ejectors maintain a good vacuum both with the engine and carriage brakes. They must from time to time test its working.

The tender hand brake is not to be used for ordinary stoppages, but must be used occasionally when running light, in order to its being kept in a state of efficiency for emergencies, and always at terminal stations.

CORK, BANDON, AND SOUTH COAST RAILWAY.

Working Automatic Vacuum Brake.

Description.

1. The automatic vacuum brake stops the train by the application of the brake blocks to the tyres, in the same way as the ordinary hand-brake; but the levers which apply the blocks, instead of being worked by a screw, are worked by a cylinder and piston, actuated by atmospheric pressure."

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine, or by the guard from his van; but in order that this may be done, it is imperative that the flexible connexions between each carriage, and between the engine and the train, shall be properly coupled up.

Instructions for Working.

3. In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together, and next to the engine. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake van, with a guard in it, must be the

last passenger vehicle in the train, and this guard must apply his hand-brake in running into all stations where the train is to be stopped.

4. Before starting, the engineman must see that his gauge indicates at least 18 inches of vacuum, and this must be kept up during the journey.

5. On no account must the small ejector be shut from the time the train starts until the journey is finished.

6. Six to eight inches in the difference of the train pipe and reservoir gauge is sufficient for an ordinary stop, and the handle should be moved into the running position before the train stops, so as to avoid jerking the train.

7. The steam-cock on the boiler must always be shut when the engine is in shed, to prevent steam leaking back into the pipes.

8. When the train is approaching a terminal station, a dead-end siding, or a crossing place where a train is on the line before or when an engine is approaching a train containing passengers, for the purpose of shunting or coupling, the hand-brake only must be used; except in cases of emergency, and on such occasions the guard must be ready to assist with his hand-brake.

9. The engineman will be held responsible for coupling the pipes between his engine and the first vehicle of the train.

10. Before leaving terminal stations, or stations where vehicles have been added to or detached from the train, the engineman must get a signal from the head guard to intimate that the gauge in the guard's van shows not less than 18 inches of vacuum, and the guard, before giving such signal, must satisfy himself that the gauge in van shows not less than 18 inches.

11. If from any cause the engineman is unable to obtain at least 18 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand-brakes.

12. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air-valve on the engine, so that there may be no delay in coupling or uncoupling.

13. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made on their journals. They must at all times be ready to apply the hand-brake should the engineman call by whistle for its assistance.

14. In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.

15. The head guard before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman:—

1st.—That all vehicles throughout the train fitted with the brake, have the flexible pipes properly coupled up.

2nd.—That the flexible pipe at the rear of the last brake-vehicle is properly placed upon the stop-plug.

3rd.—That 18 inches of vacuum is indicated by the gauge in the rear van on the train; and

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

16. Porters and others are cautioned not to step on the hose-pipes.

17. Porters and others coupling hose-pipes must be careful not to let oil get on the pipes, as it damages the rubber. Carriage examiners are cautioned for the same reason not to oil the piston-rods of the cylinders, but they should be wiped with a dry patch.

18. The brake-blocks of all vehicles must be carefully examined by the carriage examiners, and adjusted by them only.

19. It is necessary that the words "Continuous Brake Train" shall be written at the top of the engineman's sheet and guard's report for every train fitted with the automatic vacuum brake. It is also necessary for the engineman to show on his mileage ticket the trains which have been worked by him with a continuous brake during the week.

20. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his sheet, which must be accompanied by a special report giving full particulars of the irregularity.

21. To release the brakes for shunting purposes, take the hose-coupling off the stopper at one end, and pull the string fastened to the side of each carriage.

ALEX. GORDON,
General Manager.
JAMES W. JOHNSTONE,
Locomotive Engineer.

CORK, BLACKROCK, AND PASSAGE RAILWAY.

GENERAL INSTRUCTIONS.

AUTOMATIC VACUUM BRAKE FOR REGULAR USE IN DAILY WORKING.

Description.

1. The automatic vacuum brake stops the train by the application of the brake blocks to the tyres, in the same way as the ordinary hand brake; but the levers which apply the blocks, instead of being worked by a screw, are worked by cylinder and piston, actuated by atmospheric pressure.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine or by the guard from his van; but in order that this may be done, it is imperative that the flexible connections between each carriage, and between the engine and the train, shall be properly coupled up.

Instructions for working.

3. In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together and next to the engine. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake van, with a guard in it, must be the last vehicle in the train.

4. Before starting, the engineman must see that his gauge indicates at least 18 inches of vacuum, and this must be kept up during the journey.

5. On no account must the small ejector be shut from the time the train starts until the journey is finished.

6. Six to eight inches in the difference of the train pipe and reservoir gauge is sufficient for an ordinary stop; and the handle should be moved into the running position before the train stops, so as to avoid jerking the train.

7. The steam-cock on the boiler, must always be shut when the engine is in shed, to prevent steam leaking back into the pipes.

8. When the train is approaching a terminal station a dead-end siding or a crossing place, where a train is on the line before, or when an engine is approaching a train containing passengers, for the purpose of shunting or coupling, the hand-brake only must be used, and in all such cases, the guard, on hearing the engine whistle, is to apply his hand-brake, and not

remove it unless signalled from the engine by two short whistles. Automatic vacuum brake to be only used in cases of emergency.

9. The engineman will be held responsible for coupling the pipes between his engine and the first vehicle of the train.

10. Before leaving terminal stations, or stations where vehicles have been added to or detached from the train, the engineman must get a signal from the head guard to intimate that the gauge in the guard's van shows not less than 18 inches of vacuum; and the guard, before giving such signal, must satisfy himself that the gauge in van shows not less than 18 inches.

11. If from any cause the engineman is unable to obtain at least 18 inches of vacuum he must inform the guard of the fact, and they must work the train forward with the ordinary hand-brakes.

12. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air-valve on the engine, so that there may be no delay in coupling or uncoupling.

13. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made. They must at all times be ready to apply the hand brake should the engineman call by whistle for its assistance.

14. In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.

15. The head guard before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman:—

1st—That all vehicles throughout the train fitted with the brake, have the flexible pipes properly coupled up.

2nd—That the flexible pipe at the rear of the last brake-vehicle is properly placed upon the stop-plug.

3rd—That 18 inches of vacuum is indicated by the gauge in the rear van on the train; and

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

16. Porters and others are cautioned not to step on the hose-pipes.

17. Porters and others coupling hose-pipes must be careful not to let oil oil get on the pipes as it damages the rubber. Carriage examiners are cautioned for the same reason not to oil the piston rods of the cylinders, but they should be wiped with a dry patch.

18. The brake-blocks of all vehicles must be carefully examined by the carriage examiners, and adjusted by them only.

19. It is necessary that the words "Mixed Trains" shall be written at the top of the engineman's sheet and guard's report when all vehicles are not fitted with the automatic vacuum brake, and the proportion of such vehicles which may be placed at the rear of a passenger train is one in four, the engine counting as two vehicles and waggons (four wheels) half each.

20. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his sheet, which must be accompanied by a special report giving full particulars of the irregularity.

21. To release the brake for shunting purposes, take the hose coupling off the stopper at one end, and pull the string fastened to the side of each carriage.

GREAT SOUTHERN AND WESTERN (IRELAND) RAILWAY.

Automatic Vacuum Brake.

Instructions as to Working.

Drivers.

Before starting, the driver must blow up the vacuum to 18 inches, and wait until the guard comes up to the engine to tell him whether the gauge in rear van indicates the proper amount of vacuum, and also to give him the other information, as laid down in the guard's instructions below. This is also to be done at each station where any attaching or detaching has taken place.

While running, the vacuum is to be kept as near 18 inches as possible, it must not fall below 15 inches, or rise above 20 inches.

To apply the brake, move the brake handle in the direction marked *ON*.

The difference between the two fingers marked *TOP* and *BOTTOM* on the engine gauge gives the amount of brake pressure at any time; thus, if the *BOTTOM* finger indicates 10, and the *TOP* finger 18, then the brake is on with 8 inches. When the brake handle is moved suddenly to the *ON* position for a quick application the valves in the guards' vans open automatically, and the brake is on with a pressure of as many inches as is then shown by the *TOP* finger of the gauge.

To release the brake, move the brake handle to position marked *OFF*, the small ejector will then gradually take the brake off; if necessary to take it off more rapidly use the big ejector.

If the big ejector be pulled when the brake handle stands at ON it will put the brake on harder; if the big ejector be pulled when the brake handle stands at OFF it will take the brake off quicker.

Note.—The amount of vacuum shown by the gauge when the brake was put on must be recreated before the brake will come fully off. Thus, if there was a vacuum of 20 inches when the brake was put on, or if the finger marked *TOP* was blown up to 20 while the brake was on, then it would be necessary to get at least 20 inches on the *BOTTOM* finger before the brake would be fully released.

When running, the brake handle is to stand upright at position marked *R*, and the small ejector is to be regulated to maintain the required vacuum. Should the driver find it impossible to maintain the proper vacuum, or should he be signalled by the guard (pulling the communication cord and showing a green signal), that the vacuum is not maintained on the van gauge, the train must be stopped under the next fixed signals, when the driver and guard will arrange as to what should be done.

(*a.*) The brake may be disconnected from the last three or four vehicles and worked on front portion of train only, the guard working his hand brake, or

(*b.*) If the vehicle with defective brake should be next to the engine, it might be shunted to the rear, and the brake disconnected from it, leaving the brake good on the rest of the train.

(*c.*) The train brake should not be disconnected and put out of use unless absolutely necessary, and then the train must be worked with care and at reduced speed where necessary.

If both fingers of the vacuum gauge suddenly drop to zero (showing that the brake has been applied by the guard, or by separation of couplings), move the brake handle to *ON*, and if required, pull the big ejector.

The brake is not to be used for entering terminal stations or stations with blind ends.

For ordinary stops reduce the vacuum on *BOTTOM* side about 3 or 4 inches, and then regulate the force by giving a little more or less as may be required. A

decided reduction of three or four inches should be made when first applying, but if too much air is admitted the valves in the vans will open and apply the brake with full force in spite of the driver.

After coming to a stand at stations where attaching or detaching has to be done, the driver should destroy the vacuum in the train pipes by moving the brake handle gently to the *ON* position, and shut off the small ejector; this will leave the pipes easier to uncouple.

Guards.

The guard can apply the brake by holding down the lever of valve in his van, but he must not make use of the brake except in case of urgent necessity.

Head guard, before giving the signal to start, at the commencement of the journey, and at stations where any flexible pipes have been coupled or uncoupled, must ascertain, and inform the engine driver:—

1st. That all vehicles throughout the train fitted with brakes have the flexible pipes coupled up.

2nd. That the flexible pipes at the rear of the last vehicle are properly placed upon the stop plug.

3rd. That 15 inches of vacuum is indicated by the gauge in the rear van of the train.

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over and what number are without the vacuum brake, and in the case of a foreign vehicle being attached, to indicate to the driver its position on the train. When running, if the vacuum on the van gauge is allowed to fall below 15 inches, the guard must pull the communication cord, and show the driver a green hand signal.

The brake is not to be used for entering terminal stations or stations with blind ends; guards must be at their hand brakes when passing the distant signal for such stations, and must work the hand brake and assist the driver in making the stop.

The working of the continuous brake by the driver does not relieve the guard of any responsibility; he must keep a good look out and be prepared to apply the hand brake if necessary.

Guards must enter in their journals and report particulars of any failure or unsatisfactory working of the brake; they must also see that nothing is placed so as to interfere with the valve lever in their vans.

Guards must not depend upon the automatic brake to hold a train on an incline when detached from the engine, but must use their hand brakes and act as directed in rule book as if the train had no continuous brakes.

General Instructions.

Porters and others must be careful not to step on the brake pipes when crossing the buffers.

When the brake pipes are disconnected they must not be left hanging down, but must be placed firmly on the stop plugs at the ends of the vehicle.

To release the brake for shunting (the engine having left the train) pull the wire which will be found attached to frame of the carriage close to the red star; a light pull is quite sufficient, but the wire must be held for a few seconds till the brakes drop off.

To couple the pipes take one in each hand, lift them high enough to hook the bottom horns of coupling together, then lower them, and the projections on top of the coupling will fall into the slots. To uncouple the pipes, lift the couplings straight up, when they will separate.

When handling the couplings porters, firemen, and others must be careful not to have any waste or sponge cloth in their hands in order to prevent such things getting drawn into the pipes.

When attaching any foreign vehicles having only one train pipe to G. S. and W. trains, couple the pipe on the foreign vehicle to the large or bottom G. S. and W. pipe (*i.e., couple the only pipe which will couple*) and leave the small G. S. and W. pipe on the plug.

All vehicles on which the brake is automatic are marked with a red star on the frame on each side.

H. A. Ivatt, *Locomotive Engineer.*

J. H. Bell, *Superintendent of Line.*

MIDLAND GREAT WESTERN RAILWAY.

Rules to be observed in Working Power Brakes.

Instructions to Enginemen.

Continuous (Vacuum) Brakes applied to Passenger Engines and Carriages.

Before starting on the journey, when the engine is attached to the train, the driver must examine his train to see that all brake-fitted vehicles are connected, and he is to note the number (if any) in rear of the guard's van not so fitted, or, if fitted, which are not connected, so that he may know the amount of brake-power at his command.

At each intermediate station, where vehicles are taken on, or left off, it must be ascertained from the guard (whose duty it is to walk forward to the engine and give the information) to what extent the brake-power is affected by the altered composition of the train.

Ordinary stoppages must not be made too quickly, therefore the brake must be applied slightly some distance from where the train is to be stopped, and the application of it gradually and uniformly increased, until the train comes to a stand, and it must at all times be released very cautiously, to prevent the jerk consequent on the rebound of the carriage buffers and the engine shooting ahead, and to avoid subjecting the couplings to undue strain and the passengers to discomfort.

Especial care to be observed when there are vehicles in rear not fitted with brakes.

When approaching terminal stations, particularly on falling gradients, great care must be exercised, so that the stopping of the train may be under the driver's complete control. *All trains are to be stopped at every terminal and junction station by hand-brakes only*, except in case of failure of the hand-brakes, or in the event of some sudden danger arising that calls for the instant pulling up of the train, then the power-brake is to be used.

Drivers must satisfy themselves that the brake is at all times in working order. Before starting from a terminal station they are to put on the brakes and notice if the ejectors maintain a good vacuum both with the engine and carriage brakes. They must from time to time test its working.

Each engine and guard's van will be fitted with a "tell-tale" vacuum gauge. When the vehicles are all coupled together and attached to the engine and a vacuum maintained in the pipes, then the gauge will show the word "right." When the engine is detached, or any of the vehicles separated, the dial wil show the word "wrong," which means that the brake is not in working order. This may result from the connecting air-pipes between the carriages not having been coupled up, through some accident to the pipes, or to the vacuum cylinders, or from part of the train becoming detached.

Whatever the cause, when the dial shows "wrong," it is to be understood the vacuum-brake is defective, and no longer to be relied on, and recourse must then be had to the hand-brakes, and prompt steps taken to remedy any accident or make good any defect that may have taken place.

In addition to the tender hand-brake being *always* used when coming into a terminal station it must be used occasionally when running light, to insure its being kept in good working order.

It is the duty of the fireman to couple the air-pipe of the engine to the air-pipe of the train before starting, and to detach it at the end of the journey; and if the pipes between the tender and the next vehicle to it have been uncoupled at intermediate stations for shunting or other purposes, the fireman must see that they are properly coupled before the train starts, and the driver is to see that the fireman properly carries out this work.

Instructions to Guards.

The head guard must examine the train to see the number of brake-connected vehicles, and to give the necessary information, mentioned above, to the driver; and when there are vehicles over which the driver has no brake-control, the guards must give the necessary attention to the hand-brake. The working of the continuous brakes by the driver will not relieve the guards from any responsibility; they must keep a good look-out, and be prepared to apply the hand-brakes whenever any necessity arises. At terminla stations guards must apply their hand-brakes should they think the driver has not his train well in hand, or that there is the least risk of touching the buffer-stops.

The guards of the train must examine the couplings at each station where the stopping time will admit of it, and satisfy themselves, before ordering the train to start, that the pipes are firmly and properly coupled, and that the couplings and pipes are in thoroughly good order.

Guards must enter on their journals full particulars of any defect, failure, or unsatisfactory working of the brakes of their train, or any portion of the fittings, couplings, &c. They must also enter upon their journals any sudden stop made by the application of the power-brake, and state the circumstances.

Guards are required to read, and to make themselves thoroughly conversant with, the *Instructions to Drivers* on the working of continuous brakes; and their special attention is called to the Rule for the application of hand-brakes with mixed and goods trains, and to the use of hand-brakes when coming into all terminal stations.

General Instructions.

Station-masters, inspectors, and foremen must give special attention to the proper coupling of the air-brake-pipes by experienced porters, and must carefully examine the couplings before starting the train. They must make such arrangements as will insure these pipes being cared for, and in no way improperly used.

All the vehicles composing the train are to be coupled tightly together to prevent excessive action of the buffers of the carriages when the brake is applied, and to insure that the air-pipes will not be disconnected by any strain that may be put upon the drawbars.

It is the duty of the staff at stations to adjust the couplings and air-pipes of the carriages properly, and it is the duty of the fireman to attach his engine to the train before starting, and to see to the brake-couplings between the engine and the train. The driver, at stations where trains are first started from, and the head guard at intermediate stations, where vehicles are taken on or left off, are responsible for seeing that the couplings and air-pipes of the carriages composing the train are properly adjusted.

Care must be taken when, from any cause, vehicles fitted with the air-brake are detached from the train, and the pipes disconnected, that the pipes are again coupled; and when, in like manner, vehicles are attached to the train, the pipes must be properly coupled, so as to form continuous communication throughout the train, the pipe on the last brake-fitted vehicle being coupled to its "dummy."

When vehicles fitted with a continuous air-brake are left in sidings or at stations, the brake-pipes of each vehicle must be coupled to the "dummy" (fixed to each pipe) and not left hanging loose.

Porters and others are cautioned that, in passing between vehicles, *they must not step upon the brake-pipes*, or in any way interfere with the connexions.

Carriage trucks must always be put at the rear of trains.

WATERFORD AND CENTRAL IRELAND RAILWAY.

Instructions for Working Continuous Automatic Vacuum Brake.

1. In the formation of trains when the whole of the coaches are not fitted with the Automatic Vacuum brake those that are so fitted must be placed together and next to the engine. When the whole train is not fitted, the automatic vacuum brake must not be used for ordinary stoppages, but only in cases of emergency. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake carriage or van, with a guard in it, must be the last passenger vehicle in the train, and this guard must apply his hand-brake in running into all stations where the train is to be stopped.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus, by the engineman from the engine, or by the guard from his van; but in order that this may be done, it is imperative that the flexible connections between each carriage, and between the engine and the train shall be properly coupled up.

3. Guards must never apply the automatic vacuum brake except in cases of absolute emergency, and whenever they do so a full report of the circumstances must be made on their journals; they must at all times be ready to apply the *hand-brake* should the engineman call by whistle for its assistance.

4. When the automatic vacuum brake is to be used for the ordinary stoppage of trains it must be by the engine-man opening the air valve on the engine, but it must be done gradually and never suddenly or with full force except in cases of emergency, and care must be exercised to prevent jerking and rebounding of trains.

5. *In approaching junctions, terminal stations, or stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, the automatic vacuum brake or steam brake must only be used in cases of emergency, the engineman taking care to reduce the speed of the train so that the train may be brought to a stand by the hand-brakes alone. Guards must be at their hand-brakes when passing the distant signal for such stations, and must work the hand-brake and assist the driver in making the stop.*

6. In the event of a train parting, the guard in the rear portion must at once apply his hand-brake, and keep it tightly screwed on until the train is again coupled to the engine.

7. In descending inclines, the engineman must, when necessary to reduce the speed, use the automatic vacuum brake in preference to the hand-brakes, and care must be used in applying the automatic brake at any time so that the wheels will not skid.

8. The head guard before giving the signal to start at the commencing of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman—

1st—That all vehicles throughout the train fitted with the brake, have the flexible pipes properly coupled up.

2nd—That the flexible pipe at the rear of the last brake vehicle is properly placed upon the stop plug.

3rd—That 15 inches of vacuum is indicated by the gauge in the rear van, on the train, and,

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

9. The engineman before starting at the commencement of the journey, and also at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain from the guard the number of vehicles in the train fitted with the brake, the flexible pipes of which are coupled up to the engine, and that a vacuum of at least 15 inches is shown by the gauge in the rear van. He must also be careful to see—

That the vacuum pipe of his engine is properly coupled up to the leading vehicle in the train.

That at least 15 inches of vacuum is indicated by the gauge on the engine.

10. If from any cause the engineman is unable to obtain at least 15 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand-brakes.

11. Just before coming to a stand, after the application of the automatic vacuum brake at stations, or when stopped on the road, the engineman must use his ejector so as to partially release the continuous brake. This will prevent any rebound of the carriages and will also enable the engineman to start his train immediately on receipt of the signal to do so.

12. When the pipes between the engine and train are disconnected, the couplings must be placed on the plug stops provided for the purpose. Detached carriages must always have the hose couplings placed on the plug stops.

13. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air valve on the engine, so that there may be no delay in coupling or uncoupling.

14. As india-rubber is dissolved by oil or grease, it is most important that nothing of a greasy nature should be applied to, or allowed to reach the piston or piston rod. The only lubrication which is required is a little pure blacklead, which must be placed inside each cylinder by the persons appointed for the purpose. The other part of the brake must be cleaned and oiled by the examiners in the usual way.

15. In the case of vehicles fitted with the combined hand and vacuum brake, the guard must see before starting that the hand-brake is screwed "full off," and the handle secured by means of the chain provided for that purpose.

16. It is necessary that the words "continuous brake train" shall be written at the top of the engineman's train bill and guard's report for every train fitted with the automatic vacuum brake. It is also necessary for the engineman to show on his mileage ticket the trains which have been worked by him with a continuous brake during the day.

17. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his train bill, which must be accompanied by a special report giving full particulars of the irregularity.

18. Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever of the brake setter.

19. When vehicles are supplied with connecting pipes only, they must be considered as vehicles without the brake, but the brake connections must be made as described in clause 2.

20. When vehicles not fitted with a continuous brake or having connecting pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand-brake, and keep it tightly on, either until the train has come to a stand, or the driver has taken off his brake and is again going forward as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars which may occur when a powerful brake is applied to the front portion of trains only.

21. The working of the continuous brake by the driver does not relieve the guard of any responsibility; he must keep a good look out and be prepared to apply the hand-brake if necessary.

22. Guards must not depend upon the automatic brake to hold a train on an incline when detached from the engine, but must use their hand-brakes and act as if the train had no automatic brake.

23. To release the brake for shunting after the engine is detached, pull the wire which will be found attached to the frame of the carriage close to the red star; a light pull is sufficient, but the wire must be held for a few seconds till the brakes come off.

24. When handling the couplings, porters, firemen and others must be careful not to have any waste or such like article in their hands, in order to prevent such things getting drawn into the pipes.

Porters and others must be careful not to step on the brake pipes when crossing the buffers.

Shunters, porters and others will render themselves liable to immediate dismissal for tampering with or removing the vacuum brake washers or any other portions of the fittings.

J. D. Nott, Secretary.
Head Offices, Waterford, June, 1894.

WATERFORD AND LIMERICK RAILWAY.

Instructions for working Continuous Automatic Vacuum Brake.

1. In the formation of trains, when the whole of the coaches are not fitted with the automatic vacuum brake, those that are so fitted must be placed together, and next to the engine. When the whole train is not fitted, the automatic vacuum brake must not be used for ordinary stoppages, but only in cases of emergency. In all cases where the automatic vacuum brake is only partially fitted to a train, a brake van, or a carriage, with a guard in it, must be the last passenger vehicle in the train, and this guard must apply his hand brake in running into all stations where the train is to be stopped.

2. The brake can be applied throughout the whole of the vehicles fitted with the apparatus by the engineman from the engine, or by the guard from his van; but in order that this may be done, it is imperative that the flexible connexions between each carriage and between the engine and the train shall be properly coupled up.

3. Guards must never apply the automatic vacuum brake except in cases of absolute necessity, and whenever they do so a full report of the circumstances must be made on their journals; they must at all times be ready to apply the *hand brake* should the engineman call by whistle for its assistance.

4. When the automatic vacuum brake is to be used for the ordinary stoppage of trains, it must be by the engineman opening the air valve on the engine, but it must be done gradually, and never suddenly or with full force, except in cases of emergency.

5. *In approaching junctions, terminal stations, or stations at which other trains may be standing on the same line of rails, or crossing stations on single lines, the automatic vacuum brake or steam brake must only*

be used in cases of emergency, the enginemen taking care to reduce the speed of the train so that the train may be brought to a stand by the hand brakes alone.

6. In the event of a train parting, the guard in the rear portion must at once apply his hand brake, and keep it tightly screwed on until the train is again coupled to the engine.

7. In descending inclines the engineman must, when necessary to reduce the speed, use the automatic vacuum brake in preference to the hand brakes.

8. The head guard, before giving the signal to start at the commencement of the journey, and at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain and inform the engineman—

1st. That all vehicles throughout the train fitted with the brakes have the flexible pipes properly coupled up.

2nd. That the flexible pipe at the rear of the last brake vehicle is properly placed upon the stop plug.

3rd. That 15 inches of vacuum is indicated by the gauge in the rear van on the train; and,

In the event of there being any vehicles on the train not fitted with the vacuum brake, the head guard must inform the engineman of the fact before starting, so that the engineman may know what number of vehicles he has control over, and what number are without the vacuum brake.

9. The engineman, before starting at the commencement of the journey, and also at stations where any of the flexible pipes have been coupled or uncoupled, must ascertain from the guard the number of vehicles in the train fitted with the brake the flexible pipes of which are coupled up to the engine, and that a vacuum of at least 15 inches is shown by the gauge in the rear van. He must also be careful to see—

That the vacuum pipe of his engine is properly coupled up to the leading vehicle in the train.

That at least 15 inches of vacuum is indicated by the gauge on the engine.

10. If from any cause the engineman is unable to obtain at least 15 inches of vacuum, he must inform the guard of the fact, and they must work the train forward with the ordinary hand brakes.

11. Just before coming to a stand, after the application of the automatic vacuum brake at stations, or when stopped on the road, the engineman must use his ejector so as to partially release the continuous brake. This will prevent any rebound of the carriages, and will also enable the engineman to start his train immediately on receipt of the signal to do so.

12. When the pipes between the engine and train are disconnected, the couplings must be placed on the plug stops provided for the purpose. Detached carriages must always have the hose couplings placed on the plug stops.

13. At any station where there is any likelihood of vehicles being put on or taken off, the vacuum in the continuous pipe must be destroyed by opening the air valve on the engine, so that there may be no delay in coupling or uncoupling.

14. As india-rubber is dissolved by oil or grease, it is most important that nothing of a greasy nature should be applied to or allowed to reach the piston or piston rod. The only lubrication which is required is a little pure blacklead, which must be placed inside each cylinder by the persons appointed for the purpose. The other part of the brake must be cleaned and oiled by the examiners in the usual way.

15. In the case of vehicles fitted with the combined hand and vacuum brake, the guard must see before starting that the hand brake is screwed "full off," and the handle secured by means of the chain provided for that purpose.

16. It is necessary that the words "continuous brake train" shall be written at the top of the engineman's train bill and guard's report for every train fitted with the automatic vacuum brake. It is also necessary for the engineman to show on his mileage ticket the trains which have been worked by him with a continuous brake during the week.

17. If from any cause the automatic vacuum brake is not used, or fails to act when required, or if there is any irregularity in its working, a remark to that effect must be made by the guard on his report, and by the engineman on his train bill, which must be accompanied by a special report giving full particulars of the irregularity.

18. Guards must take care during the journey that nothing in the van is allowed to rest against or in any way interfere with the lever of the brake setter.

19. When vehicles are supplied with connecting pipes only, they must be considered as vehicles without the brake, but the brake connexions must be made as described in clause 2.

20. When vehicles not fitted with a continuous brake, or having connecting pipes only, are attached to a train fitted with such brake, or to an engine having the brake on the engine wheels as well as the tender wheels, the guard in the rear van must, immediately upon the continuous or engine brake being applied by the driver, apply his hand brake, and keep it tightly on, either until the train has come to a stand, or the driver has taken off his brake, and is again going forward, as the case may be. This arrangement is necessary to prevent the rebound of the carriages and possible breaking of the drawbars which may occur when a powerful brake is applied to the front portion of trains only.

JOHN ROBERTS,
Traffic Manager.

JOHN G. ROBINSON,
Locomotive and Carriage Superintendent.

July, 1889.

3.—CIRCULAR of BOARD OF TRADE to RAILWAY COMPANIES.

Board of Trade, Railway Department,
SIR, 30th August 1877.

I AM directed by the Board of Trade to request that you will call the attention of the Directors of your Company to the paper which has recently been laid before Parliament, containing the correspondence that has taken place between the Board of Trade and the Railway Association relative to the use of continuous brakes, and to state that this Department have been giving further careful consideration to this important question, as will be seen by a reference to the General Report upon Railway Accidents for the year 1876 recently presented to Parliament.

In that Report will be found the details of the circumstances attending all the accidents which have been investigated by the officers of the Board of Trade during the past year; from a careful examination of which and similar information for the past few years, the Board of Trade are led to conclude that three fourths of those accidents might probably have been avoided, or the results materially mitigated, if the passenger trains concerned had been provided with continuous brakes.

In Mr. Leeman's letter of the 18th April, forming part of the correspondence above referred to, it is stated that it is "not essential that one form of brake

should be invariably adopted." If by this it is meant that it is desirable to try every form of brake, and that it is not desirable by the exclusive adoption of one form to prevent the trial and introduction of better forms, the Board of Trade would entirely concur. But if it is meant that there would be no advantage in having one form of brake for all lines which interchange traffic with one another, the Board of Trade hold a different opinion; for it appears to them obvious that in the interchange of rolling stock, including ordinary carriages, saloon and family carriages, horse boxes, carriage and fish trucks, and other vehicles forming part of passenger trains, between one line and another, if the brake fittings are not similar, the efficiency of the brakes must be proportionately impaired and that this must be especially the case where the lines of two or more companies are continuous.

The London and North-western, the Great Northern, and the Midland Companies all run through-trains to Scotland, which are forwarded over the Caledonian, North-eastern, North British, Glasgow and South-western, and Highland Railways. It is therefore obvious that the advantage to be derived from any continuous brake system in use on any of these lines will be diminished and neutralized if at such stations as Carlisle, Glasgow, York, Edinburgh, Perth, and Inverness the traffic is so arranged that carriages with one system of brakes are attached to trains containing carriages fitted with a different system. This evil can only be avoided if those companies which interchange traffic with one another adopt one and the same general system.

The Board of Trade therefore regret to observe from the returns forwarded, in the correspondence above alluded to not only that there is no immediate prospect of the adoption of any such general system even by companies owning continuous lines, but that many of the companies are not taking, and apparently refuse to take, any steps towards that end.

Referring to the merits of the different brakes now in use, or under experiment, as stated in the answers to the questions put by the Board of Trade, it is to be remarked that the statements of the different companies vary considerably, and are scarcely consistent with each other.

Thus the London and North-western Company express themselves satisfied with a mechanical continuous brake, which is reserved for cases of emergency, and which can only be applied throughout the train by the engine-drivers or guards through the intervention of a communication-cord.

No other great company appears to have even tried this brake. On the other hand, many companies speak in the highest terms of air or vacuum brakes, which are rejected in toto by the London and North-western Company. The Great Northern Company have adopted a vacuum brake, which is highly thought of, and which it is stated can be made self-acting, but which, so far as can be learned from the correspondence, does not at present possess that quality. The Midland, North-eastern, North British, and some other companies are stated to have tried or adopted brakes which are self-acting. On the other hand, the Manchester, Sheffield, and Lincolnshire Company seem to think that new elements of danger are produced by the practical operation of continuous brakes, though they do not say what those dangers are. It would be easy, but is scarcely necessary, to dwell at greater length on the different and even discordant views disclosed in the answers of the different companies.

Under these circumstances the Board of Trade whilst recognizing the efforts which some of the companies are making in testing or adopting improved systems of brakes, cannot regard the state of things shown by these papers as satisfactory, inasmuch as it indicates a diversity of opinion and action and in some cases an absence of progress, which, if allowed to continue, will be most injurious to the character of the companies and to the interests of the public. There has apparently been no attempt on the part of the various companies to take the first step of agreeing upon what are the requirements which in their opinion are essential to a good continuous brake.

In the opinion of the Board of Trade these conditions should be as follows:—

a. The brakes to be efficient in stopping trains, instantaneous in their action, and capable of being applied without difficulty by engine-drivers or guards.

b. In case of accident to be instantaneously self-acting.

c. The brakes to be put on and taken off (with facility) on the engine and every vehicle of a train.

d The brakes to be regularly used in daily working.

e. The materials employed to be of a durable character, so as to be easily maintained and kept in order.

The inquiries and experiments instituted by the Royal Commission on Railway Accidents, and the recent researches into the causes of railway accidents during the last few years, appear to the Board of Trade to leave no doubt as to the importance of the above conditions, and the experience which has been obtained by the companies appears sufficient to enable them to come to some general and unanimous conclusion.

There can, therefore, be no reason for further delay, and the Board of Trade feel it their duty again to urge upon the railway companies the necessity for arriving at an immediate decision and united action in the matter.

The companies and their officers, who are as much interested as the public in the safe and efficient working of their railways, and upon whom devolves the adoption of proper systems of brake and of such other improvements as have been proved by past experience to be necessary in the interest of public safety, would do well to reflect that if a doubt should arise that from a conflict of interest or opinion, or from any other cause, they are not exerting themselves, it is obvious that they will call down upon themselves an interference which the Board of Trade, no less than the companies, desire to avoid.

In conclusion I am to call your attention to a notice which has already been given in Parliament for next session, for copies of any further correspondence between the Board of Trade and the Railway Companies with reference to the progress made in brake power; and in order that the Board of Trade may be in a position to furnish that information to Parliament, I am to request that the companies will from time to time furnish the Board with full accounts of any further experiments they may make, and of any steps which they may take for the adoption or extension of improved systems of brakes.

I am, &c.

The Secretary, EDWARD STANHOPE.

Railway Company.

4.—Copy of Act.

(41 Vict. Chapter 20.)

A.D. 1878.

An Act to provide for returns respecting Continuous Brakes in use on Passenger Trains on Railways. [17th June 1878.]

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

Short title.

1. This Act may be cited as the Railway Returns (Continuous Brakes) Act, 1878.

Returns to be made twice a year by railway companies to Board of Trade respecting continuous brake.

2. Every railway company shall twice in every year make to the Board of Trade returns respecting the use of continuous brakes on the passenger trains running on the railways worked by such company.

The returns shall contain the particulars and be in the form specified in the schedule to this Act, or shall contain such other particulars and be in such other form as the Board of Trade from time to time prescribe; and the Board of Trade may in any case dispense with any part of the returns where they deem the same inapplicable.

The returns shall be made for the six months ending on the last day of December and the last day of June in every year, or on such other days as the Board of Trade from time to time direct, and shall be made within fourteen days after the expiration of each six months.

Every return shall be signed by the officer of the company responsible for the correctness of the return, and by the chairman or deputy chairman of the directors of the company, or where there are no directors by the individual or one of the individuals bound to make the return.

Any railway company who fail to comply with this section shall be liable on summary conviction before a court of summary jurisdiction to a fine not exceeding five pounds for every day during which the default continues.

Any person who makes or is privy to the making of a return under this Act which is to his knowledge false in any particular shall be liable on summary conviction before a court of summary jurisdiction to a fine not exceeding fifty pounds.

34 & 35 Vict. c. 78.

Expressions in this Act have the same meaning as they have in the Regulation of Railways Act, 1871.

SCHEDULE.

Forms of Return (as amended by Board of Trade).

Return for the Six Months ending on the day of 18 of the Amount and Description of Continuous Brake Power in use on the Passenger Trains running on the railways worked by the Railway Company.

Name of Railway Company.	Name and Description of Brake or Brakes adopted by the Company and in use on Passenger Trains on Lines worked by them.	(1.) Whether the brakes are instantaneous in action and capable of being applied by engine-driver and guards. (2.) Whether self-acting. (3.) Whether capable of being applied to every vehicle of a train. (4.) Whether in regular use in daily working. (5.) Whether the materials employed are of a durable character, easily maintained and kept in order. (6.) Whether the brakes are used for every stoppage.	Amount of Stock fitted with Continuous Brakes.						Amount of Stock NOT fitted with Continuous Brakes.		Amount of Stock fitted during the above Six Months.				Special Rules under which the Continuous Brakes are worked.
			Number of Engines and Tenders (used for Passenger Trains) in which the Continuous Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Vehicles. Passenger Carriages. Fitted with Brake Gear complete.	Passenger Carriages. Fitted only with Chains or Pipes and Connections for connecting the Brake.	Other Vehicles used for Passenger Trains. Fitted with Brake Gear complete.	Other Vehicles used for Passenger Trains. Fitted only with Chains or Pipes and Connections for connecting the Brake.	Number of Engines and Tenders used for Passenger Trains.	Number of Passenger Carriages and other Vehicles used for Passenger Train	Number of Engines and Tenders (used for Passenger Trains) in which the Brakes can be applied to the Wheels.	Number of Engines and Tenders (used for Passenger Trains) fitted only with Apparatus for applying the Brake.	Number of Passenger Carriages and other Vehicles used for Passenger Trains. Fitted with Brake Gear complete.	Number of Passenger Carriages and other Vehicles used for Passenger Trains. Fitted only with Chains or Pipes and Connections for connecting the Brake.	
	(Each description of Continuous Brake to be given.)	*(Replies to these questions to be given for each description of Brake, and also state whether the Brakes are used for every stoppage.)*	*(The amount of stock fitted with each description of Brake to be given.)*								*(The amount of stock for each description of Brake to be given.)*				

No. 2.—Return for the Six Months ending on the day of 18 of all instances in which Continuous Brakes have failed to act when required to be brought into action, or have caused delay in the working of the trains on any railway worked by the Railway Company.

1. Name of Railway Company.	2. Name or description of Brake which failed or caused delay in any of the instances asked for in Column 4.	3. Date of Failure.	4. Instances under the three following heads separately of:— 1. Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. 2. Failure or partial failure to act under ordinary circumstances to stop a train when required. 3. Delay in the working of trains in consequence of defects in, or improper action of, the brakes, distinguishing whether they arose from neglect or inexperience of servants or failure of machinery or material.	5. Number of Miles run by Trains fitted with each description of Continuous Brake.

No. 3.—Return for the Six Months ending on the day of 18 of the Number of Miles run by Passenger Trains not fitted with Continuous Brakes on any railway worked by the Railway Company.

Name of Railway Company.	Name of Railway worked by Company on which Passenger Train ran without Continuous Brake.	Number of Miles run by Passenger Trains without Continuous Brakes.

RETURN to an Order of the Honourable The House of Commons, dated 20 March 1894;—*for*,

REPORT

BY THE BOARD OF TRADE

UPON ALL THE

RAILWAY, CANAL, TRAMWAY, GAS, AND WATER BILLS AND PROVISIONAL ORDERS

OF

SESSION 1894.

(*Mr. Burt.*)

Ordered, by The House of Commons, *to be Printed*, 20 *March* 1894.

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GENERAL INDEX.

Page

REPORT - - - - - - - - - - - - - - - 3

NUMBER of RAILWAY, CANAL, TRAMWAY, GAS, and WATER BILLS, the Total proposed CAPITAL, and the Total LENGTH of proposed RAILWAYS and TRAMWAYS - - - - - - - - - - - 3

NUMBER of APPLICATIONS to the BOARD OF TRADE for PROVISIONAL ORDERS under the TRAMWAYS ACT, the GAS AND WATER WORKS FACILITIES ACTS, and the ELECTRIC LIGHTING ACTS - - - - - 4

BILLS for RAILWAYS, &c., by EXISTING and NEW COMPANIES - - - 5

BILLS for TRAMWAYS, GAS and WATER - - - - - - - - 9

ANALYSIS of BILLS:

- RAILWAY AND CANAL - - - - - - - - - - - - 10
- TRAMWAY - - - - - - - - - - - - - - 20
- GAS AND WATER - - - - - - - - - - - - 21
- WATER - - - - - - - - - - - - - - - 24

ANALYSIS of APPLICATIONS to BOARD OF TRADE for PROVISIONAL ORDERS:

- TRAMWAY - - - - - - - - - - - - - - 27
- GAS - - - - - - - - - - - - - - - 28
- WATER - - - - - - - - - - - - - - - 29
- ELECTRIC LIGHTING - - - - - - - - - - - 30

GROUPING of BILLS:

- RAILWAY AND CANAL - - - - - - - - - - - - 32
- TRAMWAY - - - - - - - - - - - - - - 36
- GAS AND WATER - - - - - - - - - - - - 37

AMALGAMATION of RAILWAYS - - - - - - - - - - 39

APPENDIX:

1. LIST of BILLS for which REPORTS are required to be made by the Board of Trade with regard to Tolls, Rates, and Charges, under Standing Order of House of Commons, 145A - - - - - - 41
2. LIST of BILLS containing Powers of Purchase, &c., in respect of which it may be necessary for the Board of Trade to issue Certificates of compliance with Standing Orders 122 House of Lords, and 163 House of Commons, as regards the Paid-up Capital and Expenditure of the Companies - - - - - - - - - - - 42
3. LIST of BILLS for which REPORTS are required to be made by the Board of Trade with regard to Abandonments and Release of Deposits, under Standing Order 158A, House of Commons - - 42
4. LIST of BILLS for which REPORTS are required to be made by the Board of Trade with regard to Level Crossings and Inclination of Roads, under Standing Orders 154 and 155 - - - - - 43

REPORT OF THE BOARD OF TRADE ON THE RAILWAY, CANAL, TRAMWAY, GAS, WATER BILLS, AND PROVISIONAL ORDERS, 1894.

THE total number of Bills deposited for the Session of 1894, relating to RAILWAYS, CANALS, TRAMWAYS, and the Supply of GAS and WATER, is 127, as compared with 134 of the Session of 1893; the total amount of money proposed to be raised is 22,146,305 *l.*, as compared with 30,068,670*l.*, a decrease of 7,922,365 *l.*

RAILWAYS AND CANALS.

The Bills which relate to RAILWAYS and CANALS amount to 82, of which 44 propose to authorise the Construction of New Railways or Additional Railway Works.

	Number of Bills.	Length of New Line.	Proposed Capital.		
			By Shares.	By Loan.	Total.
I. PROMOTED BY EXISTING COMPANIES:		*Miles.*	£.	£.	£.
ENGLAND	60	160	4,760,700	2,054,649	6,815,349
SCOTLAND	7	41	690,000	238,000	928,000
IRELAND	3	64	915,000	446,666	1,361,666
TOTAL	70	265	6,365,700	2,739,315	9,105,015
II. PROMOTED BY NEW COMPANIES:					
ENGLAND	11	140	5,575,000	1,844,600	7,419,600
SCOTLAND	—	—	—	—	—
IRELAND	1	2	200,000	100,000	300,000
TOTAL	12	142	5,775,000	1,944,600	7,719,600
TOTAL for RAILWAYS and CANALS	82	407	12,140,700	4,683,915	16,824,615

TRAMWAYS, &c.

The Number of Bills which relate to TRAMWAYS, &c., amounts to 5.

ENGLAND	4	7	100,000	25,000	125,000
SCOTLAND	1	3	—	—	—
IRELAND	—	—	—	—	—
TOTAL for TRAMWAYS, &c.	5	10	100,000	25,000	125,000

GAS.

The Number of Bills which relate to the Supply of GAS amounts to 19.*

ENGLAND	15	-	540,000	501,700	1,041,700
SCOTLAND	4	-	90,000	242,500	332,500
IRELAND	—	—	—	—	—
TOTAL for GAS	19	-	630,000	744,200	1,374,200

WATER.

The Number of Bills which relate to the Supply of WATER amounts to 22†.

ENGLAND	21	-	985,000	2,837,490	3,822,490
SCOTLAND	1	—	—	—	—
IRELAND	—	—	—	—	—
TOTAL for WATER	22	-	985,000	2,837,490	3,822,490
GENERAL TOTAL for RAILWAYS, CANALS, TRAMWAYS, SUBWAYS, GAS, and WATER	127	Railway 407; Tramway 10	13,855,700	8,290,605	22,146,305

* Provisions relating to the Supply of Water are contained in seven of these Bills.
† One of these provides also for the construction of a railway.

PROVISIONAL ORDERS.

THE Number of Applications made to the Board of Trade for Provisional Orders relating to TRAMWAYS, the Supply of GAS and WATER, and ELECTRIC LIGHTING, amounts to 49.

	NUMBER OF APPLICATIONS.	PROPOSED CAPITAL (ESTIMATE).	LENGTH OF ROAD FOR WHICH TRAMWAY IS PROPOSED.	REMARKS.
		£.		
ENGLAND AND WALES AND SCOTLAND:				
TRAMWAYS - - - - - -	8	*155,707	(double line) 15 m. 65 chs. (single line) 5 m. 29 chs.	*Estimate of expense of construction.
GAS - - - - - - - -	9	192,500	—	
WATER - - - - - - - -	6	152,000	—	
TOTAL, GAS and WATER - - -	15	344,500	—	
ENGLAND, SCOTLAND, AND IRELAND.				
ELECTRIC LIGHTING - - -	26	402,970	—	
GENERAL TOTAL for TRAMWAYS, GAS and WATER, and ELECTRIC LIGHTING Provisional Orders -	49	903,177	(double line) 15 m. 65 chs. (single line) 5 m. 29 chs.	

RAILWAY AND CANAL BILLS.

The Bills of existing companies number 70; the new lines proposed show a length of 265 miles, as against 144 miles in Session 1893, and the amount of new capital proposed to be raised is 9,105,015*l.*, against 19,076,898*l.*

The Bills of new railway companies number 12, compared with 13 last year; the new lines proposed show a length of 142 miles, as compared with 114 miles, and the amount of capital proposed to be raised is 7,719,600*l.*, as compared with 5,852,566*l.*

Together the existing and new railway companies' Bills number 82, as compared with 80, the length of new lines 407 miles, as compared with 258 miles, an increase of 149 miles, and the amount of capital to be raised 16,824,615*l.*, as compared with 24,929,464*l.*, a decrease of 8,104,849*l.*

There are no Bills for any new underground Railways in the Metropolis, but it must be borne in mind that recently very important Acts have been obtained for underground lines of considerable length in London. It may, however, be observed that the Central London Railway Company apply for an extension of time for the construction of their line.

In the vicinity of the Metropolis may be mentioned the *London, Walthamstow, and Epping Forest Railway Bill*, which proposes the construction of a line from Finsbury-square by way of Hackney and Walthamstow to Epping Forest, a distance of 16 miles, and the Ealing and South Harrow Railway Bill for making a railway between Ealing and South Harrow, 5 miles 9 chains in length.

In Scotland an exceptional scheme is contained in the *West Highland Railway (Mallaig Extension) Bill*, for the construction of an extension from Banavie to Mallaig, a distance of 39 miles 53 chains, and provision is made empowering the Lords Commissioners of Her Majesty's Treasury to guarantee a certain dividend.

In Ireland the *Midland Great Western of Ireland Railway Bill* empowers the Company to construct railways from Kingscourt to Cookstown, and a junction with the Great Northern Railway, Ireland, at Armagh, a length of 64 miles 10 chains.

The following Bills refer to Navigations or Canals, namely:—

The Clyde Navigation Bill proposes to extend the periods limited by the Clyde Navigation Act, 1891, for the purchase of lands, and the completion of the railway thereby authorised, to levy rates and to enter into working agreements with certain railway companies.

The Grand Canal Company's Bill proposes to authorise the amalgamation of the Barrow Navigation Company with the Grand Canal Company; and to confer further powers on the Company.

The Leicestershire and Northamptonshire Union and Grand Union Canals (Transfer) Bill proposes to authorise the transfer of the Leicestershire and Northamptonshire Union Canal and of the Grand Union Canal to the Company of the Proprietors of the Grand Junction Canal; to provide for the winding-up and dissolution of the selling Companies; and for raising additional capital.

The Manchester Ship Canal Bill proposes to empower the Company to make a pier or jetty at Eastham, in the county of Chester; and a railway in the parish of Runcorn, terminating by a junction with the Birkenhead, Lancashire, and Cheshire Junction Railway; to revive power to make a branch railway at Warrington (under the Act of 1885); to take additional land; and to apply capital.

The North Eastern Railway Bill proposes to authorise the Company to sell their Boroughbridge and Ripon Canal to any other Company or person, or to abandon such undertaking.

The Rochdale Canal Bill proposes to renew the powers of the Company of Proprietors of the Rochdale Canal; and to borrow money.

The Sheffield and South Yorkshire Navigation Company's Bill proposes to extend the time for the compulsory acquisition of lands under the provisions of the Sheffield and South Yorkshire Navigation Act, 1889, and to make further provisions with respect to the transfer to the Sheffield and South Yorkshire Navigation Company of certain of the Canal Undertakings of the Manchester, Sheffield, and Lincolnshire Railway Company; and to modify the borrowing powers of the former Company.

In the following Bills application is made for authority to abandon the whole of the authorised railway, namely:—

Brighton, Rottingdean, and Newhaven Direct Railway.

Hull and North Western Junction Railway.

Towcester and Buckingham Railway.

Worcester and Broom Railway.

The Bills that seek authority for the amalgamation or absorption by sale, lease, or transfer of the undertakings of certain other companies will be found at pages 39 and 40.

PROPOSED RAILWAYS AND CANALS BY NEW AND EXISTING COMPANIES.

These may be summarised as follows:—

In ENGLAND and WALES.

(*a*) London and the Suburbs.

The Ealing and South Harrow Railway Bill proposes to incorporate a Company for making a railway between Ealing and South Harrow (5 miles 9 chains).

The Great Northern Railway Bill proposes to empower the Company to make certain short lines at Islington and Hornsey (2 miles 6 chains).

The London, Walthamstow, and Epping Forest Railway Bill is to incorporate a Company for constructing a railway from Finsbury-square, by way of Hackney and Walthamstow to Epping Forest (16 miles).

The Midland Railway Bill, amongst other things, proposes to authorise certain widenings at Camden Town and Kentish Town.

The Uxbridge and Rickmansworth Railway Bill proposes to incorporate a Company for making a railway from the Great Western Railway at Uxbridge to Rickmansworth (10 miles 9 chains).

(*b*) Other Districts.

The Barry Railway Bill is to empower the Barry Railway Company to construct certain additional railways in the county of Glamorgan (3 miles 3 chains).

The

The Birmingham, North Warwickshire, and Stratford-upon-Avon Railway Bill proposes to incorporate a Company for constructing a railway from Birmingham to Stratford-upon-Avon, and a short junction line with the Great Western and the East and West Junction Railways (25 miles 2 chains).

The Budleigh Salterton Railway Bill proposes to incorporate a Company for the making of a railway from Ottery St. Mary to Budleigh Salterton (6 miles 47 chains).

The Carmarthen, Pendine, and South Milford Haven Railway Bill proposes to incorporate a Company for making a railway from a junction with the Central Wales and Carmarthen Junction at Abergwili to Eglwys, and to the town of Laugharne (28 miles).

The Cockermouth, Keswick, and Penrith Railway Bill is to empower the Company to widen and improve certain portions of their line (4 miles 71 chains).

The East Denbighshire Railway Bill proposes to incorporate a Company for making certain railways in the parishes of Wrexham and Ruabon in connection with the Wrexham, Mold, and Connah's Quay Railway (5 miles).

The East Glamorgan Railway Bill proposes to incorporate a Company for making a railway in the counties of Glamorgan and Monmouth from Llantrissant to Gelligaer, and a junction with the Taff Bargoed line of the Great Western and Rhymney Railways (15 miles).

The Great Northern Railway Bill is to empower the Company to make certain short lines at Islington and Hornsey (2 miles 6 chains).

The Great Western Railway (*No.* 1) *Bill* is to empower the Company to make a junction line at Wrexham, a short junction with the Pennar Branch, a junction with the South Wales Railway at Margam, a certain deviation line, and certain viaducts and embankments in Cornwall (26 miles 45 chains).

The Great Western Railway (*No.* 2) *Bill* is to empower the Company to make a railway from Plymstock to Yealmpton in connection with the Plymouth and Dartmoor line (4 miles 74 chains).

The Lancashire and Yorkshire Railway Bill proposes to authorise certain widenings and improvements at Bolton and Wigan and deviations of the Accrington and Colne Extension line (2 miles 40 chains).

The London and North Western Railway Bill is to empower the Company to make a short deviation of their line at Peasley Cross (1 mile 25 chains).

The London, Brighton, and South Coast Railway Bill is to empower the Company to construct a line from a junction with the main line near Earlswood Station to Coulsdon, Surrey, and to a junction with the Company's railway at South Croydon Station (10 miles 25 chains).

The Manchester, Sheffield, and Lincolnshire Railway Bill proposes to authorise the construction of certain railways in the counties of Nottingham, Leicester, Warwick, and Northampton (14 miles 35 chains).

The Midland Railway Bill is to empower the Company and the Midland and Great Northern Railways Joint Committee to make certain new short lines, a deviation, and widening (2 miles 60 chains).

The North Cornwall Railway Bill proposes to authorise the Company to make certain new and deviation railways at St. Issey, Padstow, St. Breock, Truro, and Kenwyn (31 miles 22 chains).

The North Eastern Railway Bill is to empower the Company to make an Extension line from Dunston to Gateshead, a deviation of the Team Valley Railway, and certain junction lines (21 miles 17 chains).

The Port Talbot Railway and Docks Bill proposes to authorise the construction of certain additional lines (17 miles 22 chains).

The Sheffield Central Station and District Railways Bill proposes to incorporate a Company for making certain railways in Sheffield and Derbyshire in connection with a central station in Sheffield (15 miles 28 chains).

The Totnes, Paignton, and Torquay Railway Bill proposes to incorporate a Company for making a railway from Totnes to Paignton in the county of Devon (6 miles 48 chains).

The Truro and Newquay Junction Railway Bill proposes to incorporate a Company for making a railway from Truro to Newlyn (7 miles 39 chains).

In Scotland.

The Caledonian Railway Bill is to empower the Company to widen the Glasgow Central Railway and to deviate the railway authorised by the Leith Lines Act, 1890 (41 chains).

The Great North of Scotland Railway Bill is to empower the Company to make a deviation railway in the parish of Cruden in the county of Aberdeen, on the line from Ellan to Boddam (2 miles 12 chains).

The North British Railway Bill proposes to authorise the Company to construct certain new short lines at Bathgate and Dunfermline (66 chains).

The West Highland Railway (Mallaig Extension) Bill proposes to authorise the construction of an extension of the railway from Banavie to Mallaig (39 miles 53 chains).

In Ireland.

The Drumcondra and North Dublin Link Railway Bill proposes to incorporate a Company for making a railway from the North Wall Extension of the Great Southern and Western Railway to a junction with the City of Dublin Junction Railways (2 miles 42 chains).

The Midland Great Western of Ireland Railway Bill is to empower the Company to construct railways from Kingscourt to Cookstown, and a junction (with the Great Northern Railway, Ireland) at Armagh (64 miles 10 chains).

TRAMWAY BILLS.

Five Bills relate to Tramways. By them the construction of 10 miles of Tramway, and the raising of sums of money amounting in the aggregate to 125,000*l.*, is proposed. As compared with 1893, the number of Bills shows a decrease of 13, and the capital proposed a decrease of 527,400*l.*

Four of these Bills relate to Tramways in England, and one to a Tramway in Ireland.

An Analysis of these Tramway Bills will be found at page 20.

GAS AND WATER BILLS.

Of these Bills, 41 in number, 12 relate to the supply of Gas, seven to the supply of Gas and Water, and 22 to the supply of Water only.

The total capital proposed to be raised by these 41 Bills amounts to 5,196,690*l.*, or 708,884*l.* more than in 1893.

The Analysis of the Gas and Water Bills will be found at pages 21 and 24.

ANALYSIS OF BILLS.

RAILWAY AND CANAL BILLS.

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Barry Railway - -	35	To authorise the Barry Railway Company to construct additional railways in the county of Glamorgan, with an embankment or breakwater at Barry Island, to raise additional capital ; and for other purposes.	150,000	50,000	3 3
Barry Dock and Railways Act, 1888 (Amendment).	35	To explain the provisions of the 23rd Section of the Barry Dock and Railways Act, 1888, as to affording facilities for goods and traffic.	—	—	—
Birmingham, North Warwickshire, and Stratford-upon-Avon.	34	To incorporate a Company with power to construct a railway from Birmingham to Stratford-upon-Avon, a short junction line with the Great Western Railway and the East and West Junction Railway, to enter into working agreements with certain companies ; and for other purposes.	650,000	216,600	25 2
Bray and Enniskerry Railway.	36	To extend the time for the completion of the railway authorised by the Bray and Enniskerry Light Railway Act, 1886 (with a gauge of three feet), and to raise a certain amount of capital in lieu of forfeited shares ; and for other purposes.	15,000	—	—
Brighton, Rottingdean, and Newhaven Direct Railway (Abandonment).	32	To authorise the abandonment of the railways under the Acts of 1886 and 1887, and the repayment of the deposit funds, and the winding up of Company.	—	—	—
Budleigh Salterton Railway.	33	To incorporate a Company to make a railway wholly situate in the county of Devon, commencing at Ottery St. Mary, by a junction with the Sidmouth Railway, and terminating at Budleigh Salterton ; and for other purposes.	60,000	20,000	6 47
Bute Docks, Cardiff -	35	To empower the Bute Docks Company to construct seawalls or embankments, to reclaim portions of the foreshore or bed of the River Severn or Bristol Channel, and a new dock thereon, together with a railway from a junction with the Company's main line running south of the Roath Dock to the foreshore, and a diversion of portion of the River Taff ; to abandon a portion of Railway No. 3, authorised by Act, 1882, to run over certain railways (capital by shares 1,000,000*l.* Loan 330,000*l.*)	—	—	1 1
Caledonian Railway -	35 39	To confer further powers on the Caledonian Railway Company for the widening of the Glasgow Central Railway, a deviation of the railway authorised by the Leith Lines Act, 1890, roads in the parishes of Mains and Neilston ; to abandon a portion of Railway No. 2 under the said Act ; to acquire certain lands in Glasgow and Edinburgh ; to extend the time for purchase of land and completion of works under Act, 1890 ; to stop up certain crossings and roads ; to provide for the acquisition by Company of the Forfar and Brechin Railway ; and for other purposes.	330,000	110,000	0 41
Cardiff Corporation -	35	To empower the Corporation of Cardiff amongst other things to make a railway wholly in the county of Brecknock, commencing in the parish of Cantraff, by a junction with the railway of the Corporation, and terminating in the parish of Llanspythid.	—	—	0 72

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Carmarthen, Pendine, and South Milford Haven Railway.	35	To incorporate a Company with power to make a railway from a junction with the Central Wales and Carmarthen Junction line of the London and North Western Railway at Abergwili to Eglwys Cymmyn; and also to a junction with the Pembroke and Tenby Railway; and to the town of Lougharne, in the counties of Carmarthen and Pembroke; and for other purposes.	400,000	133,000	28 0
Central London Railway (Extension of Time).	32	To extend the time limited by the Company Acts of 1891 and 1892, for the completion of the line thereby authorised from Shepherd's Bush to Liverpool-street.	—	—	—
Channel Bridge and Railway Company, Limited.	32	To confer certain powers on the Company in relation to the making of a bridge or viaduct over the English Channel as a means of communication by steam or otherwise between England and France; to enter into arrangements with Government, Companies, and Bodies; to make experimental works, with power to the Treasury to conditionally sanction the prosecution of permanent works, and acquire the same; to make a line joining the Dover and Deal Railway. (Company may apply for purposes of Act any moneys in hand or capital already authorised.)	—	—	2 41
Channel Tunnel (Experimental Works).	33 39	To empower the Channel Company, Limited, to maintain existing works and execute further experimental works; and to provide if experimental works succeed that the Lords of the Treasury may sanction prosecution of permanent works; and further if tunnel be made that the Lords Commissioners may require the same to be transferred to them; to apply capital; and for other purposes.	—	—	—
Charing Cross, Euston, and Hampstead Railway.	32	To confer further powers on the Charing Cross, Euston, and Hampstead Railway Company; to acquire additional lands; to sell lands; and for other purposes.	—	—	—
Clyde Navigation - -	35	To extend the periods limited by the Clyde Navigation Act, 1891, for the purchase of lands and the completion of the railway thereby authorised, to vary rates, to enter into working agreements with certain railway companies; and for other purposes.	—	—	—
Cockermouth, Keswick, and Penrith.	34	To authorise Company to widen and improve certain portions of their railway; to acquire additional lands; to raise additional capital; and for other purposes.	51,000	17,000	Widening 4 71
Cornwall Minerals Railway.	33	To authorise the Cornwall Minerals Railway Company to acquire additional lands for the improvement and enlargement of their stations and works; to create debenture stock in connection with the Fowey undertaking; to raise additional capital in respect of the Goonbarrow Branch; and for other purposes.	—	30,000	—
Drumcondra and North Dublin Link Railway.	36	To incorporate a Company for making a railway in the County and County of the City of Dublin from the North Wall Extension (No. 1) Railway of the Great Southern and Western Railway to a junction with the City of Dublin Junction Railways of the Dublin, Wicklow and Wexford Railway; and a line from such new railway to join the North Wall Extension Railway at West-road, in the parish of St. Thomas; to enter into working agreements; and for other purposes.	200,000	100,000	2 42

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Dublin, Wicklow, and Wexford Railway, and City of Dublin Junction Railways.	36	To enable the Dublin, Wicklow, and Wexford Railway Company to raise additional capital for the City of Dublin Junction Railways, and for the Wicklow Company to grant running and other powers with reference to other undertakings; to confer further powers on that Company as regards their own undertaking and that of the City of Dublin Junction Railways; and for other purposes.	* 100,000	Company may raise £50,000 of Share Capital by Loan. 180,000	—
Dundee Suburban Railway.	35	To extend the time authorised for the completion of the Dundee Suburban Railway; and for other purposes.	—	—	—
Ealing and South Harrow Railway.	32	To incorporate a Company for making a railway between Ealing and South Harrow, in the county of Middlesex; to enter into traffic agreements with the Metropolitan District Railway Company; and for other purposes.	120,000	40,000	5 9
East and West Yorkshire Union Railways.	33	To authorise the abandonment of a portion of Railway No. 1 under the Act, 1883, and provide for release of portion of relative deposit; to reduce the capital of the Company; to borrow a certain sum; and for other purposes.	—	20,000	—
East Denbighshire Railway.	35	To incorporate a Company for making railways in the county of Denbigh, in the parishes of Wrexham and Ruabon, in connection with the Wrexham, Mold, and Connah's Quay Railway; and for other purposes.	90,000	30,000	5 0
East Glamorgan Railway	35	To incorporate a Company for making a railway in the counties of Glamorgan and Monmouth from a junction with the Barry Railway at Llantrissant to a junction with the Rhymney Railway at Gelligaer, and a junction with the Taff Bargoed line of the Great Western and Rhymney Railways; to empower the Barry Railway Company to subscribe; and for other purposes.	450,000	150,000	15 0
East London Water -	32	To give effect to an agreement between Company and the persons entitled to or claiming rights over lands acquired by the Company in the parish of Low or St. Mary Leyton, Essex, and to maintain thereon a single line of rails; and for other purposes. (*See* also Water Bills.)	—	—	—
Easton and Church Hope Railway (Extension of Time).	33	To extend the time for the completion of the authorised railways of the Easton and Church Hope Railway; and for other purposes	—	—	—
Enniskillen, Bundoran, and Sligo.	36 39	To remove doubts as to the provisions of the Great Northern Railway (Ireland) Act, 1892, with respect to the acquisition of the undertaking of the Enniskillen, Bundoran, and Sligo Railway Company; and for other purposes.	—	—	—
Exeter, Teign Valley, and Chagford Railway (Extension of Time).	33	To extend the time for construction of authorised railway; to raise additional capital; and for other purposes.	24,000	8,000	—
Fishguard Bay Railway and Pier (Waterford and Wexford Railway, and Rosslare Harbour Purchase).	35 39	To vest the undertakings of the Waterford and Wexford Railway and of the Rosslare Harbour Commissioners in the Fishguard Bay Railway and Pier Company; to authorise Company to raise additional capital; to change their name; and for other purposes.	60,000	20,000	—

* For the purposes of the separate undertaking of the City of Dublin Junction Railways.

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Furness Railway - -	34	To confer further powers upon the Furness Railway Company for the maintenance of works, the acquisition of lands, the raising of capital; to protect railway against injury by the working of mines and minerals; and for other purposes.	100,000	33,333	—
Glasgow District Subway Company.	35	To authorise Company to raise additional capital; to confer on them further powers as to lands; to extend the time for the completion of their authorised undertaking; and for other purposes. (Power to raise further moneys upon the security of surplus land and revenues thereof.)	100,000	—	—
Golden Valley Railway -	35	To extend the time for the completion of railway; to extinguish certain unexercised capital powers; to raise additional capital; and for other purposes.	72,000	180,000	—
Grand Canal Company -	34 39	To authorise the amalgamation of the Barrow Navigation Company with the Grand Canal Company; to confer further powers on the Company; and for other purposes.	—	100,000	—
Great Northern Railway -	34 39	To empower the Great Northern Railway Company to make certain short lines at Islington and Hornsey in connection with Company's undertaking; to purchase additional lands; to empower the Stamford and Essendine Railway Company to lease their undertaking to the Company; to dissolve the Hunslet Company and transfer its powers to Company, and to make deviation of Hunslet Railway, and abandon the construction of portion of Railway No. 3, authorised by that Railway Company's Act, 1893; to transfer the Halifax undertaking to Company and the Lancashire and Yorkshire Railway Company; for the two Companies to raise additional capital; and for other purposes.	500,000 *142,700	165,000 47,566	2 6
Great North of Scotland Railway.	35	To empower Company to make a deviation railway in the parish of Cruden in the county of Aberdeen, on the line from Ellan to Boddam; to exercise certain running powers; to provide for further traffic facilities from other Companies; to apply corporate funds for requirements of Act; and for other purposes.	—	—	2 12
Great Western Railway (No. 1).	35 39	To empower Company to make new railways, viz.: a junction line at Wrexham from the Shrewsbury and Chester line to the Company's Llwynennion Branch, a short junction line with the Pennar Branch, a junction line with the South Wales Railway at Margam, and various other junction lines in the parish of Margam in the county of Glamorgan, a deviation line in lieu of Railway No. 6, authorised by the Company's Act, 1883, and Railway No. 2 by the Company's Act, 1890, certain viaducts and embankments in Cornwall; to make new roads and alterations of roads and footpaths; to acquire additional lands in numerous places; to deal with roads; to make new works together with the North Western Company, and acquire land at Shrewsbury; to abandon certain railways; to amalgamate the Tiverton and North Devon and the Oldbury Railway Companies with the Company; to raise additional capital; and for other purposes.	750,000	250,000	26 45

* For Lancashire and Yorkshire Railway Company.

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Great Western Railway (No. 2)	33	To empower Company to make a railway from Plymstock in the county of Devon by a junction with the line of the Plymouth and Dartmoor Company, and terminating at Yealmpton; to divert roads; to exercise running powers; to raise additional capital; and for other purposes.	75,000	25,000	4 74
Great Western and Midland Railway Companies (Severn and Wye and Severn Bridge Railway).	33 39	For vesting in the Great Western and Midland Railway Companies the undertaking of the Severn and Wye and Severn Bridge Railway Company, and providing for the winding up of that undertaking; also, to vest in the two Companies jointly the Gloucester and Berkeley New Docks Branch of the Midland Railway; to provide for a joint committee of the two Companies who may apply corporate funds; and for other purposes.	—	—	—
Hull and North Western Junction Railway (Abandonment).	33	To provide for the abandonment of the remaining portion of the authorised undertaking of the Company, the release of the deposit money, and the winding-up and dissolution of the Company.	—	—	—
Hull, Barnsley, and West Riding Junction Railway and Dock.	33	To extend the period authorised for the completion of docks and works at Hull under the Company's Act of 1882; to provide for the purchase of additional lands; to apply funds; to enable Company to issue balance at discount; and for other purposes.	—	—	—
Lambourn Valley Railway.	33 39	To extend the time for the completion and opening of the Lambourn Valley Railway; to empower the Company and the Great Western Railway Company to enter into agreements for the transfer or lease of railway to the latter Company; and for other purposes.	—	—	—
Lancashire and Yorkshire Railway.	34	To empower the Company to make certain widenings and improvements at Bolton and Wigan; deviations of the Accrington to Colne Extension line; to extend the time for completing Railway No. 1, authorised by Company's Act, 1890; to stop up certain streets, footpaths, and make new ones respectively at Bolton, Nelson, Horbury, and Todmorden; to take lands at various places; to abandon the construction of the Branch Railway at Salford (No. 2), authorised by the Company's Act, 1890; to raise additional capital; and for other purposes.	450,000	150,000	3 8
Lancashire, Derbyshire, and East Coast Railway.	34	To empower the Company to alter line and level of portions of Company's authorised railways; to divert and stop up certain roads and footpaths; to deviate in construction of works; to acquire additional lands; to extend the time for completing railways; to abandon the construction of certain authorised lines; and for other purposes.	—	—	—
Leicestershire and Northamptonshire Union and Grand Union Canals (Transfer).	34 39	To authorise the transfer of the Leicestershire and Northamptonshire Union Canal and of the Grand Union Canal to the Company of the proprietors of the Grand Junction Canal; and provide for the winding-up and dissolution of the selling Companies; to raise additional capital; and for other purposes.	70,000	(Or in whole or part to borrow such sum.)	—

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
London and North Western.	34	To empower the Company to make a deviation of their railway at Peasley Cross; alterations of the levels of the Heaton Lodge and Wortley line; to divert certain footpaths and roads, and make new ones at Braunston, Moore, Coppull, Harpur Hill, Mirfield, Heckmondwike, Gomersall; to acquire additional lands at East Haddon, Rugby, Hinckley, Stoney Stanton, Croft, Moira, Tamhorn, Albion, Mesty Croft, Willenhall, Crewe, and other places; power to the Shropshire Union Company to acquire land; to abandon a portion of the line at Peasley Cross authorised by the Company's Act, 1891; with power to Company and the Great Western and Shropshire Union Companies to apply corporate funds; and for purposes of Act.		—	1 25
London, Brighton, and South Coast.	33	To empower the Company to make a line from a junction with the main line near Earlswood Station to Coulsdon in the county of Surrey, and from thence to a junction with the Company's railway at the south end of South Croydon Station, with power to close certain footpaths in the parish of Merton, Surrey, and at Denton, Sussex; for Company and the South Western Company to acquire additional lands at Portsea; and to the two Companies to apply funds, and raise additional capital; and for other purposes.	360,000	120,000	10 25
London, Brighton, and South Coast Railway (Steam Vessels).	33	To extend the provisions of the Company's (Steamboat) Act, 1864, so as to apply to and include the port and harbour of Newhaven in the county of Sussex.	—	—	—
London, Chatham, and Dover Railway.	33	To extend the time for completion of the widenings of Company's line authorised in 1879; to empower Company to stop up certain level crossings at Beckenham and Bromley; to acquire Albion Wharf, Blackfriars; to make agreement with the South Eastern Railway Company; to make, subject to approval by the Board of Trade, bye-laws as to traction engines, &c., crossing the Company's railways; and apply corporate funds for purposes of Act.	—	—	—
London, Walthamstow, and Epping Forest Railway.	34	To incorporate a Company for constructing a railway from Finsbury-square by way of Hackney and Walthamstow to Epping Forest, with junctions with the Great Eastern and the Tottenham and Hampstead Junction Railways; to provide trains for the working classes; to enter into working and traffic arrangements with the Great Eastern Railway Company; and for other purposes.	2,100,000	700,000	16 0
Longton, Adderley Green, and Bucknall Railway (Transfer).	34 40	For vesting the undertakings of the Longton, Adderley Green, and Bucknall Railway Company in the North Staffordshire Railway Company; and for other purposes.	—	—	—
Manchester, Sheffield, and Lincolnshire Railway.	34	To authorise the Manchester, Sheffield, and Lincolnshire Railway Company to construct certain railways in the counties of Nottingham, Leicester, Warwick, and Northampton; certain diversions of roads and other works; to abandon portions of certain railways authorised by the Company's Extension to London Act, 1893; to acquire lands for general purposes; to extend the time for the completion of certain lines and works; to apply corporate funds; and for other purposes.	—	—	14 35

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Manchester, Sheffield, and Lincolnshire and Liverpool, St. Helens, and South Lancashire Railway Companies.	34	To empower the Manchester, Sheffield, and Lincolnshire Company to subscribe further moneys to the undertaking of the St. Helens Company; to authorise the latter Company to borrow money; to increase the number of directors of this Company; and for other purposes.	—	50,000	—
Manchester Ship Canal -	34	To empower Company to make a pier or jetty at Eastham in the county of Chester; and a railway in the parish of Runcorn, terminating by a junction with the Birkenhead, Lancashire, and Cheshire Junction Railway; to revive power to make branch railway at Warrington (under Act 1885); to take additional land; to apply capital; and for other purposes.	—	—	0 66
Mersey Railway (Rates and Charges).	34	For transferring with respect to the classification of Merchandise Traffic and the Schedule of Maximum Rates and Charges the name of the Company from the Order applicable to the Taff Vale to the Order applicable to the East London Railway Company.	—	—	—
Mersey Railway (Various Powers).	34	To authorise the abandonment of certain railways authorised by the Mersey Railway Act, 1885 and 1887; to provide for repayment of deposit funds; and for other purposes.	—	—	—
Milford Docks - -	35	To alter and amend the Company's Act, 1892, in relation to the special charge debenture stock therein authorised, and to vest the railway undertaking and fund in trustees; and for other purposes.	—	—	—
Midland Great Western Railway of Ireland.	36	To empower the Company to construct railways from Kingscourt to Cookstown in the county of Tyrone, and a junction with the Great Northern Railway (Ireland) at Armagh; to abandon so much of the Westport and Mullaranny Railway authorised by the Westport and Mullaranny Order, 1890, as will be rendered unnecessary by the construction of the proposed deviation; to divert and stop up certain roads and acquire lands; to erect hotels; and for other purposes.	300,000	266,666	64 10
Midland Railway - -	34	To empower the Midland Railway Company and the Midland and Great Northern Railways Joint Committee to make new Railways; the Wincobank North Curve in the West Riding of York; a deviation at Hemingfield; widenings at Camden Town and at Kentish Town; running powers to Great Eastern Railway Company; to abandon portion of the Chapeltown Branch Extension Railway authorised by the Company's Act, 1892; to make new street and acquire lands; to the Committee to widen line at Spalding; to make footbridges and acquire lands at various places; to revive powers for purchase of lands for the Mundesley Branch and extend time; and for other purposes.	600,000	200,000	2 60
North British Railway -	35	To authorise the North British Railway Company to construct new lines at Bathgate and Dunfermline; to acquire lands; to widen bridge in parish of Kinghorn; to extend the time for purchase of lands and completion of works; to abandon the construction of portion of Railway No. 6, authorised by the Company's General Powers Act, 1891; to use joint passenger station at Aberdeen; to apply corporate funds; and for other purposes.	—	—	0 06

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CH.
North Cornwall Railway -	33	To empower the North Cornwall Railway Company to make certain new and deviation railways at St. Issey, Padstow, and St. Breock, Truro, Kenwyn; to raise additional capital; to acquire additional lands; divert roads; to abandon portion of Railway No. 1, authorised by the Company's Act, 1882, and certain other portions; and for other purposes.	330,000	110,000	31 22
North Eastern Railway -	33 40	To empower the Company to make an extension line from Dunston to Gateshead; a deviation of the Team Valley Railway; a widening at Gateshead; a junction between Tanfield Branch and the Dunstan lines; a junction between the Consett and Redheugh branches; a line from Hartlepool to Seaham Harbour; a railway at Hunslet; a widening of the portion of the York and Newcastle line; to empower Company and other Companies to make new railways at Normanton; to acquire additional lands; to dissolve Wear Valley Company, and transfer its powers to Company; to authorise the sale or abandonment of the Boroughbridge and Ripon Canal; to abandon portion of Railway No. 7, authorised by Company's Act, 1893; to abandon portion of Sherburn House and Shincliffe Railway and the Whitwell Branch Railway; to raise additional capital and apply funds; and for other purposes.	840,000	280,000	21 17
Oxford and Aylesbury Tramroad.	34	To empower the Oxford and Aylesbury Tramroad Company to deviate part of the tramroad authorised by the Act of 1888, as amended by the Act, 1892; to abandon portion of line; to revive the powers and extend the time for the purchase of lands, and for the completion of the remainder of the tramroad; and for other purposes.	15,000	3,750	5 57
Peterhead Harbours -	35 40	To empower the Trustees of the Harbours of Peterhead amongst other things to purchase and the Great North of Scotland Railway Company to sell a certain portion of the Harbour Branch Railway.	—	—	—
Plymouth and Dartmoor Railway.	33	To revive the powers and extend the time in respect to the works authorised by the Company's Act, 1883, the South Hams Extension Act, 1888, and the Act, 1891; and for other purposes.	—	—	—
Pontypridd Waterworks Company (Tramroad).	35	To authorise the Company to make a tramroad (to be deemed a railway), from the northern termination of the railway siding in the Taff Vale Railway Company's goods yard at Maerdy, in the county of Glamorgan, in connection with Company's undertaking, apply funds, and raise additional capital.	6,000	—	2 39
Port Talbot Railway and Docks.	35	To dissolve and reincorporate, and to confer further powers upon the Port Talbot Company, and to authorise them to construct an additional dock and railways; and for other purposes. (Capital Shares 600,000*l.*, Loan 174,000*l.*)	—	—	17 22
Rochdale Canal - -	34	To renew the powers of the Company of Proprietors of the Rochdale Canal; to borrow money; and for other purposes.	—	100,000	—

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Sheffield and South Yorkshire Navigation Company.	34 40	To extend the time for the compulsory acquisition of lands under the provisions of the Sheffield and South Yorkshire Navigation Act, 1889, and to make further provisions with respect to the transfer to the Sheffield and South Yorkshire Navigation Company of certain of the Canal Undertakings of the Manchester, Sheffield, and Lincolnshire Railway Company ; to modify the former Company's borrowing powers ; and for other purposes.	—	—	—
Sheffield Central Station and District Railways.	34	To incorporate a Company for making certain railways in Sheffield and Derbyshire in connection with a central station in Sheffield, and to improve streets, and divert roads, and empower the Corporation of Sheffield to contribute towards the expense of works in Sheffield, and hold shares in capital of Company ; and for other purposes.	1,350,000	450,000	15 28
Shropshire Railways -	35	To authorise the abandonment of the Railways under the Shropshire Railways Act, 1888, and provide for the release of the deposit money.	—	—	—
South Eastern Railway -	33 40	To authorise Company to divert a footpath at Crayford ; to purchase additional lands at Lewisham, Appledore, and Deal ; to extend the time for the completion of works authorised by the Company's Act, 1883 ; and for the purchase of lands in respect to other of the Company's Acts ; to abandon a portion of the railway authorised by the Act, 1887, in the parish of Cranbrook ; and the construction of tramways under the Folkestone, Sandgate, and Hythe Tramways Act, 1884 and 1889 ; to amend the Charing Cross Railway Act, 1859, and Company's Act, 1892 ; to give further powers to Company as to leasing, &c., of hotels ; to apply corporate funds ; and for other purposes.	—	—	—
Southern Railway - -	36	To confirm an agreement entered into between the Great Southern and Western Railway Company and the Commissioners of Public Works in Ireland, for the improvement and use of the railway station at Thurles.	—	—	—
South Yorkshire Junction Railway.	34 40	To authorise the construction of new railways in the West Riding of the county of York from Balby-with-Hexthorpe to a junction with the Great Northern and Great Eastern Joint Railway at Cantley ; and a short junction line in connection therewith ; to vest the Company's general undertaking in the Great Eastern Company ; and to empower the latter Company to apply corporate funds for purchase of Act.	—	—	0 72
Swansea Harbour - -	35	To authorise the Swansea Harbour Trustees to enlarge and extend the Prince of Wales Dock at Swansea, to make a short railway, a deviation of their canal ; and for other purposes.	—	—	—
Taff Vale Railway - -	35 40	To authorise the construction of a short junction line in connection with the Company's main line between Cardiff and Merthyr Tydfil ; to divert roads ; to make a diversion of the River Rhondda Fawr and other works ; to acquire lands for general purpposes ; to stop up certain footpaths ; to authorise the abandonment of Railway No. 2 of the Company's Act, 1890 ; to empower the Cowbridge and Aberthaw Company to raise additional capital ; for Company to apply corporate funds ; and to vest in Company the undertaking of the last-named Company.	15,000	5,000	0 37

RAILWAY AND CANAL BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Railway.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Totnes, Paignton, and Torquay Railway.	33	To incorporate a Company for making a railway from Totnes to Paignton, in the county of Devon, by a junction with the Great Western Railway; to empower the Company to enter into working agreement with certain companies; and for other purposes.	90,000	30,000	6 48
Tottenham and Forest Gate Railway.	34	To authorise the Company to raise additional capital; to empower the Midland and the London, Tilbury, and Southend Railway Companies to subscribe capital and apply funds; to sell lands; and for other purposes.	150,000	50,000	—
Truro and Newquay Junction Railway.	33	To incorporate a Company for making a railway from Truro to Newlyn; to exercise running powers over portion of Great Western and Cornwall Minerals Railways; to enter into working agreement; and for other purposes.	105,000	35,000	7 39
Uxbridge and Rickmansworth Railway.	34	To incorporate a Company for making a railway from the Great Western Railway at Uxbridge to the London and North Western and Metropolitan Railways at Rickmansworth; to empower Company to enter into traffic arrangements; and for other purposes.	160,000	40,000	10 9
West Highland Railway (Mallaig Extension).	35	To empower the West Highland Railway Company to construct an extension of their Railway from Banavie to Mallaig, together with a pier and other works in connection therewith; to authorise the Board of Trade to dispense with or modify their usual requirements in sanctioning opening of railway; to apply corporate funds; to raise additional capital; to empower the Treasury to guarantee a certain dividend; and for other purposes.	260,000	128,000	39 53
West Lancashire Railway	34	To reconstitute the Board of Directors of the West Lancashire Railway Company; for raising further moneys; and for other purposes.	—	40,000	—
Worcester and Broom Railway (Abandonment).	35	To authorise the abandonment of the Company's railway, and to provide for the winding-up and dissolution of the Company.	—	—	—

TRAMWAY BILLS.

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed New Capital.		Length of Proposed Tramways.
			By Shares.	By Loan.	
			£.	£.	M. CHS.
Aberdeen District - - -	36	To authorise additional Tramways, including a doubling of existing single lines and certain lines already laid by consent of Local Authority.	—	—	double 1 29 single 2 15
Bristol - - - - -	36	To authorise additional Tramways, being mainly a doubling of existing single lines, to be worked by animal, electrical, or mechanical power.	—	—	double 2 38 single 0 72
Harrow-road and Paddington.	36	To further extend the time for the compulsory purchase of lands and for the completion of the Tramways authorised by the Harrow-road and Paddington Tramways Act 1891.	—	—	—
London Tramways Company (Limited).	36	To authorise extension Tramways, to be worked, with the consent of the Board of Trade, by cable power.	—	—	double 1 11 single 0 40
West London - - -	36	To incorporate the West London Tramways Company, and to authorise Tramways in Acton, Hammersmith, and Fulham, to be worked by electrical or mechanical power, other than locomotive steam power; and providing for running powers over, and purchase of, West Metropolitan Tramways.	100,000	25,000	double 1 6 single 1 3
		TOTAL - - - £.	100,000	25,000	double 6 4 single 4 55

GAS BILLS.

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed Capital.		Special Rate of Dividend (if any).	Proposed Illuminating Power.	Proposed Maximum Price per 1,000 Cubic Feet.
			By Shares.	By Loan.			
			£.	£.		*Candles.*	*s. d.*
Abertillery Local Board (Gas and Water).	38	To authorise the transfer of part of the undertaking of the Brynmawr and Abertillery Gas and Water Company to the Abertillery Local Board; to confer powers upon the Local Board with respect to the supply of gas and water; to authorise the Local Board to construct new waterworks; to borrow money for gas and water purposes, respectively; and for other purposes. (*See* Water Bills.)	—	Gas undertaking 18,000 and one-half of the costs of the Act.	—	—	—
Accrington Gas and Water Board.	38	To constitute and incorporate a Gas and Water Board for the Borough of Accrington and the Districts of the Local Boards of Church, Clayton-le-Moors, Great Harwood, and Rishton, and to transfer to and vest in such Board the undertaking of the Accrington Gas and Waterworks Company; to authorise the Board to borrow money in respect of the gas and water undertakings, respectively; and for other purposes. (*See* Water Bills.)	—	104,000 for gas undertaking 5,000 payable to the Company under agreement; and amounts required from time to time for redemption of annuities.	—	—	4 - with discounts of 3*d.* and 6*d.* according to consumption.
Ambleside District Gas and Water.	38	To dissolve the Ambleside District Gas and Water Company, Limited, and re-incorporate with powers to manufacture and supply gas, and to supply water within the limits of the Act; to raise capital; to provide that separate accounts shall be kept in respect of the gas and water undertakings; and for other purposes. (*See* Water Bills.)	*Original,* 12,000 | 3,000 *Additional,* 13,000 | 3,250		10 per cent. on original capital; 7 per cent. on additional ordinary capital; 6 per cent. on additional preference capital. Additional capital subject to Auction Clauses.	14	6 8
Bury Corporation	38	To empower the Corporation of Bury to borrow money for gasworks purposes; to provide for the compulsory registration of gasfitters, within the Borough; and for other purposes. (*See* Water Bills.)	—	50,000	—	—	—
Carshalton Gas -	37	To provide for the amalgamation of the Carshalton Gas Company with the Croydon Commercial Gas and Coke Company; and for other purposes.	—	—	—	—	4 7 (in the Carshalton district) subject to sliding scale as to price and dividend.
Driffield Gas -	37	To dissolve the Driffield Gas Light Company, and to re-incorporate with power to supply gas within the limits prescribed by the Act; and for other purposes.	*Original,* 12,000 | 3,000 *Additional,* 18,000 | 4,500		10 per cent. on original capital; 7 per cent. on additional ordinary, and 6 per cent. on additional preference capital, subject to Auction Clauses.	14	4 - with sliding scale as to price and dividend; discounts not exceeding 20 per per cent.

GAS BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed Capital.		Special Rate of Dividend (if any).	Proposed Illuminating Power.	Proposed Maximum Price per 1,000 Cubic Feet.
			By Shares.	By Loan.			
			£.	£.		*Candles.*	*s. d.*
Dundee Corporation.	38	To constitute the Town Council the Commissioners for carrying the Gas Acts into executing in lieu of the Commissioners constituted by "The Dundee Gas Act, 1868"; to provide for the issue of redeemable gas debenture stock; and for other purposes. (*See* Water Bills.)	—	—	—	—	—
Edinburgh and Leith Corporations Gas.	37	To authorise the construction of additional gasworks, and to confer further powers upon the Edinburgh and Leith Corporations Gas Commissioners in relation to their gas undertaking; and for other purposes.	—	100,000	—	—	—
Falkirk and District Gas.	37	To dissolve the Falkirk Joint Stock Gas Company, Limited, and to re-incorporate under the name of the Falkirk and District Gas Company, with power to manufacture and supply gas within the limits of the Act; and for other purposes.	*Original,* 50,000	12,500	8 per cent. on original capital; 6 per cent. on additional ordinary and preference capital, subject to Auction Clauses.	20	4 5 with sliding scale as to price and dividend; discounts not exceeding 10 per cent.
			Additional, 40,000	10,000			
Falkirk Corporation Gas.	37	To authorise the Corporation of the Burgh of Falkirk to construct and maintain gasworks, and to supply gas within the Burgh of Falkirk and adjacent places; to empower the Corporation to purchase, by agreement, the undertaking of the Falkirk Joint Stock Gas Company, Limited; and for other purposes.	—	120,000	—	20	Price to be fixed from time to time to meet expenses of undertaking.
Harrow and Stanmore Gas.	37	To confirm an agreement for the acquisition by the Harrow District Gas Company of the undertaking of the Great Stanmore Gas Company, Limited; to extend the limits of supply of the Harrow District Gas Company; to define the existing capital of the Company; to authorise them to raise additional capital; to alter their name to the Harrow and Stanmore Gas Company; and for other purposes.	60,000	17,500	7 per cent. on additional capital.	—	—
Hebden Bridge Gas.	37	To authorise the Company to acquire further lands; to construct and maintain additional works; to raise further capital; and for other purposes.	25,000	6,250	10 per cent. on 13,670*l.* stock; 7 per cent. on 16,424*l.* share capital; 7 per cent. on additional ordinary, and 6 per cent. on additional preference capital, subject to Auction Clauses.	14	4 – with sliding scale as to price and dividend.

GAS BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Proposed Capital.		Special Rate of Dividend (if any).	Proposed Illuminating Power.	Proposed Maximum Price per 1,000 Cubic Feet.
			By Shares.	By Loan.			
			£.	£.		*Candles.*	*s. d.*
Kendal Corporation Gas and Water.	38	To authorise the transfer of the undertaking of the Kendal Union Gas and Water Company to the Corporation of Kendal; to enable the Corporation to borrow money; to confer powers upon them with regard to the supply of gas and water; to provide for separate accounts being kept of the gas and water portions of the undertaking; and for other purposes. (*See* Water Bills.)	—	For gasworks purposes 21,000; for the purchase of the underaking 90,200; and sum required for costs of the Act.	—	14	4 6
Manchester Corporation.	37	To empower the Corporation to acquire lands for gas purposes; and for other purposes.	—	6,000	—	—	—
Millom Local Board.	38	To confer further powers upon the Local Board with reference to the manufacture and storage of gas; to extend the limits of supply; and for other purposes. (*See* Water Bills.)	—	— Such sums as may be sanctioned by the Local Government Board.	—	—	—
Paignton Gas -	37	To dissolve the Paignton Gas Light, Coke, and Coal Company, Limited, and re-incorporate, with power to supply gas in the Parish of Paignton and adjacent parishes; to construct new works; and for other purposes.	*Original,* 13,800 *Additional,* 36,200	3,450 9,050	10 per cent. on original capital; 7 per cent. on additional ordinary; and 6 per cent. on additional preference capital, subject to Auction Clauses.	15	4 - with sliding scale as to price and dividend; discounts not exceeding 10 per cent.
Plymouth and Stonehouse Gas Light and Coke.	37	To authorise the Company to raise additional capital; and to convert the existing capital of the Company into stock bearing a maximum dividend of 5 per cent.; to vary the provisions of the sliding scale of price and dividend; to empower the Company to apply for a Provisional Order under the Electric Lighting Acts; and for other purposes.	100,000	70,000 In respect of original stock, 25,000 in respect of additional stock.	5 per cent. on ordinary and additional stock. Additional stock subject to Auction Clauses.	—	—
Preston Gas -	37	To authorise the Company to construct additional works and railway sidings; to raise additional capital; to extend the limits of supply; to empower the Company to make application, if they think fit, for a Provisional Order under the Electric Lighting Acts; and for other purposes.	200,000	50,000	7 per cent. on additional ordinary; and 5 per cent. on additional preference capital. Subject to Auction Clauses.	18	5 - in the added area.
Torquay Gas -	37	To authorise the Company to construct additional works, and to raise further capital; to authorise the allowance of discounts to consumers of gas; and for other purposes.	50,000	12,500	7 per cent. on additional ordinary; and 6 per cent. on additional preference capital. Subject to Auction Clauses.	—	—
		TOTAL GAS BILLS - - £.	630,000	744,200			

WATER BILLS.

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Capital Proposed.	
			By Shares.	By Loans.
			£.	£.
Aberdare Local Board Water	37	To authorise the Aberdare Local Board to construct additional waterworks; to borrow money; and for other purposes.	—	28,000
Abertillery Local Board (Gas and Water).	38	*See* Gas Bills - - - - - - - - -	—	52,000 for water undertaking; and one-half of the costs of the Act.
Accrington Gas and Water Board.	38	*See* Gas Bills - - - - - - - - -	—	56,000 for water undertaking.
Alloa Water - - -	37	To amend the provisions of Section 10 of the Alloa Water Act, 1891, with respect to the construction of certain works.	—	—
Ambleside District Gas and Water.	38	*See* Gas Bills - - - - - - - - -	—	—
Bacup Corporation Water -	37	To authorise the Corporation of Bacup to purchase and acquire the undertaking of the Rossendale Waterworks Company, and to confer powers upon the Corporation with respect to the supply of water within the Borough of Bacup and part of the Township of Newchurch; and for other purposes	—	13,870 also the amounts required from time to time for the redemption of annuities and for costs of Act, &c.
Barnsley Corporation (Water).	37	To authorise the Corporation of Barnsley to purchase the Waterworks of the Penistone Local Board; to construct further works; to borrow further money; and to extend the limits for the supply of water by the Corporation; and for other purposes.	—	30,000
Bury Corporation - -	38	To empower the Corporation of Bury to purchase land for the purposes of their waterworks undertaking; to extend the period within which the Corporation are required to supply water to the District of Haslingden; and for other purposes. (*See* Gas Bills.)	—	—
Cardiff Corporation - -	37	To authorise the Corporation of Cardiff to construct new waterworks and to maintain a railway in connection with their waterworks undertaking; to borrow money; and for other purposes. (*See* Railway Bills.)	—	350,000 and one-fourth of the costs of the Act.
Chesterfield Waterworks and Gas Light Company.	37	To empower the Company to construct additional works and obtain a further supply of water; to extend the limits of supply; to authorise the raising of additional capital, subject to the Auction Clauses; to increase the charges which the Company are authorised to make for water; and for other purposes.	100,000	25,000
Colne Valley and Central Middlesex Water Companies.	37	To authorise the Central Middlesex Water Company, Limited, to sell and transfer a portion of their undertaking to the Colne Valley Water Company and to enter into agreements for the transfer of the remainder of the undertaking to the Colne Valley Water Company, the Grand Junction Water Company, and the Rickmansworth and Uxbridge Valley Water Company, or to any of those Companies; and for other purposes.	—	—

WATER BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Capital Proposed.	
			By Shares.	By Loans.
			£.	£.
Consett Waterworks	37	To empower the Company to construct additional works, and to obtain a further supply of water; to raise additional capital, subject to the auction clauses, and to issue debenture stock; to extend the limits of supply; to authorise the transfer to the Weardale and Shildon District Waterworks Company of a portion of the District included in the Company's limits of supply; and for other purposes.	225,000	56,250
Dundee Corporation	38	To provide for the transaction of the business of the Dundee Water Commissioners at meetings of the Town Council; to authorise the issue of redeemable water debenture stock; and for other purposes. (*See* Gas Bills.)	—	—
East London Water	37	To authorise the East London Waterworks Company to execute further works, and to raise further money by the issue of debenture stock, subject to auction clauses; to confirm an agreement with regard to common rights over certain lands acquired by the Company; to confer further powers upon the Company; to amend the Acts relating to the undertaking; and for other purposes.	—	Debenture Stock, 500,000
Fulwood Local Board	37	To authorise the Fulwood Local Board to construct additional works, and to obtain a further supply of water; to enable the Local Board to borrow further money; and for other purposes.	—	10,000 and costs of the Act and further sums requisite, subject to consent of Local Government Board.
Gloucester Corporation	37	To authorise the Corporation to construct additional works; to borrow further money in respect of the water undertaking; and for other purposes.	—	45,000 and sum required for cost of the Act, and further sums, subject to consent of Local Government Board.
Kendal Corporation Gas and Water.	38	To authorise the transfer of the undertaking of Kendal Union Gas and Water Company to the Corporation of Kendal; to enable the Corporation to borrow money; to confer powers upon the Corporation with regard to the improvement of the water undertaking; and for other purposes. (*See* Gas Bills.)	—	28,800 (in addition to amount shown on page 23).
London County Council (Water).	38	To empower the London County Council by agreement to purchase or take on lease, and hold land and water rights.	—	—
Millom Local Board	38	To empower the Local Board to construct additional waterworks, and to confer further powers upon them in relation to their water undertaking; and for other purposes. (*See* Gas Bills.)	—	Such sums as may be authorised by the Local Government Board.
Neath Corporation Water	38	To authorise the transfer to the Corporation of Neath of the undertaking of the Neath Water Company; to provide for the dissolution of the Company; to confer powers upon the Corporation in relation to the construction of additional waterworks, and the supply of water; to empower the Corporation to sell portions of their undertaking to local authorities; and for other purposes.	—	62,070 And amount required for redemption of debenture debt.

WATER BILLS—*continued.*

NAME OF BILL.	Page in Grouping List of Report.	OBJECT OF BILL.	Capital Proposed.	
			By Shares.	By Loans.
			£.	£.
Newcastle and Gateshead Water.	38	To empower the Newcastle and Gateshead Water Company to abandon the construction of a portion of certain works authorised by the Newcastle and Gateshead Waterworks Act, 1889, and to construct a new reservoir and works in lieu thereof; to empower the Company to raise further capital, subject to auction clauses; and for other purposes.	500,000	125,000
Southend Waterworks -	38	To extend the limits of supply, and to confer further powers on the Company for the construction of additional works, and the raising of further capital; and for other purposes.	80,000	20,000
South Hants Water - -	38	To extend the limits of supply; to authorise the Company to construct additional works; to raise additional capital, subject to the auction clauses; and for other purposes.	80,000	20,000
Southwark and Vauxhall Water.	38	To extend the limits of supply; to authorise the Company to construct additional waterworks, and to take a further supply of water from the River Thames; to raise additional capital by the issue of debenture stock, subject to the auction clauses; to provide for the consolidation of existing debenture stocks; and for other purposes.	—	Debenture Stock, 750,000
Swindon Water - - -	38	To incorporate the members of the Local Boards for the districts of Old Swindon and Swindon New Town as a Water Board, with power to acquire the undertaking of the Swindon Waterworks Company, Limited; to construct additional waterworks; to supply water within the limits of the Act; to raise money; and for other purposes.	—	112,500 And such other sums as may be required for the purposes of the undertaking and the cost of the Act as may be sanctioned by the Local Government Board.
Swinton Local Board - -	38	To empower the Local Board to construct additional waterworks; to alter the rates which may be charged for the supply of water; to enable the Local Board to sell minerals; to borrow money; and for other purposes.	—	10,000 And costs of Act.
Thames Conservancy - -	38	*Inter alia*, to confer upon the Metropolitan Water Companies certain rights of control over the works executed by the Conservators, and with regard to taking a supply of water from the Thames; to provide for contributions being paid by the Water Companies to the funds of the Conservators; and for other purposes.	—	—
Torquay Water and Improvement.	38	To enable the Corporation of Torquay to acquire lands for the purposes of their water undertaking; to construct additional works; to borrow money; and for other purposes.	—	43,000
West Middlesex Waterworks.	38	To authorise the Company of Proprietors of the West Middlesex Waterworks to raise additional capital by the issue of debenture stock, subject to auction clauses; and for other purposes.	—	Debenture Stock, 500,000
		TOTAL WATER BILLS - - £.	985,000	2,837,490

APPLICATIONS TO THE BOARD OF TRADE FOR PROVISIONAL ORDERS.

TRAMWAY PROVISIONAL ORDERS.

NAME OF ORDER.	OBJECTS OF ORDER.	Length of the Proposed Tramways.		Estimated Cost of Proposed Tramways.
		Double Line.	Single Line.	
		M. CHS.	M. CHS.	£.
Barrow-in-Furness Corporation -	To authorise the construction of additional Tramways in the borough, on a gauge of 4 feet, to be worked by animal, mechanical, or electric power; and to enable the Corporation to work the Tramways in certain circumstances.	0 15	1 31	8,000
Croydon Corporation - -	To authorise the construction of Tramways in the county borough, to be worked by animal power, or with the consent of the Board of Trade, by electrical, steam, or any mechanical power; and to empower the Corporation to borrow 2,500*l.*, and such further sums as the Board of Trade might sanction.	0 5	0 9	1,550
Croydon (Extensions) - -	To authorise the construction of Tramways in Croydon and Streatham, on a gauge of 4 feet 8½ inches, to be worked by animal power, or with the consent of the Board of Trade, by electrical, cable, mechanical or other power; the erection of posts, wires, &c.; the removal of certain existing tramways; the raising of 40,000*l.* additional share capital, and borrowing of 10,000*l.*	2 67	1 2	26,700
Dudley and Wolverhampton -	To authorise the construction of Tramways in Dudley, Wolverhampton, and Bilston, on a gauge of 4 feet 8½ inches, to be worked by animal power, or with the consent of the Board of Trade, by steam, cable, electrical, or other traction.	0 23	2 5	13,140
Liverpool, Bootle, and Walton-on-the-Hill.	To authorise the construction of Tramways in Bootle and Walton, to be worked by animal or mechanical power.	0 9	0 42	3,821
Liverpool Corporation - -	To authorise the construction of additional Tramways in the City of Liverpool, to be worked by animal, steam, electrical, or any mechanical power; providing for lease to Liverpool United Tramways and Omnibus Company; and for borrowing 5,100*l.*	0 28	0 3	5,100
South Staffordshire - - -	To authorise the construction of Tramways in West Bromwich and Handsworth, on a gauge of 3 feet 6 inches, to be worked by animal power, or with the consent of the Board of Trade by cable, electrical, mechanical, or or other power; and the removal of existing Tramways for which proposed Tramways are to be substituted.	2 52	0 5	26,856
West and East Hull - - -	To authorise the construction of Tramways in Hull, on a gauge of 4 feet 8½ inches, to be worked by animal or mechanical power; and enabling the Corporation of Hull to purchase the Tramways.	6 15 (by the Hull Company) 3 11 (by the Drypool Company.)	0 4 (by the Hull Company) 0 3 (by the Drypool Company.)	70,540
	TOTAL - - -	15 65	5 29	155,707

GAS AND WATER PROVISIONAL ORDERS.

NAME OF ORDER.	OBJECT OF ORDER.	Capital Proposed.	
		By Shares.	By Loans.
		£.	£.
	GAS PROVISIONAL ORDERS.		
Bolsover Gas Lighting	To empower the Bolsover Gas Light and Coke Company, Limited, to maintain and continue existing works and to construct new works, and to manufacture and supply gas in the parish of Bolsover, in the County of Derby.	*Original* 1,000 *Additional* 4,000	— 2,500
Broadstairs Gas	To empower the Broadstairs Gas Company to construct additional works for the storage of gas and coke.	—	—
Earby and Thornton Gas	To empower the Earby and Thornton Gas and Lighting Company, Limited, to maintain and continue gasworks, and to manufacture and supply gas in the parish of Thornton-in-Craven, in the West Riding of the County of York.	10,000	2,500
Ilford Gas	To empower the Ilford Gas Light and Coke Company (Limited) to raise additional capital; to purchase additional lands, and to construct and maintain additional works.	40,000	10,000
Newquay (Cornwall) Gas	To empower the Newquay Gas Company, Limited, to maintain and continue gasworks, and to manufacture and supply gas in the parish of Saint Columb Minor, in the County of Cornwall.	*Original* 8,000 *Additional* 4,500	3,125
North Bierley Gas	To empower the North Bierley Gas Company to borrow additional money on mortgage	—	9,375
Uttoxeter Gas	To empower the Uttoxeter Gas Works, Limited, to maintain and continue gasworks, and to manufacture and supply gas within the parish of Uttoxeter, in the County of Stafford.	*Original* 7,500 *Additional* 2,500	2,500
Willenhall Gas	To empower the Willenhall Gas Company to raise additional capital.	20,000	5 000
Worthing Gas Light and Coke Company.	To empower the Worthing Gas Light and Coke Company to raise additional capital, and to construct and maintain additional works.	45,000	15,000
	TOTAL £.	142,500	50,000

GAS AND WATER PROVISIONAL ORDERS—*continued.*

NAME OF ORDER.	OBJECT OF ORDER.	Capital Proposed.	
		By Shares.	By Loans.
	WATER PROVISIONAL ORDERS.	£.	£.
Bishop's Waltham	To authorise the maintenance and continuance of waterworks, and supply of water, in the Parish of Bishop's Waltham.	10,000	2,500
Blandford	To authorise the construction of waterworks and supply of water in the parishes of Blandford Forum, Bryanston, Blandford St. Mary, Langton-Long Blandford, Pimperne, Charlton Marshall and Spetisbury, and empowering the Corporation of Blandford Forum to purchase the undertaking.	10,000	2,000
East Surrey	To authorise the acquisition of further land, and the raising of additional capital.	80,000	20,000
Steyning	To authorise a supply of water to the town and parish of Steyning, in the County of Sussex, to be taken by agreement from the Shoreham and District Waterworks Company.	6,000	1,500
Tilehurst, Pangbourne and District	To authorise the construction of waterworks and the supply of water in the parishes of Sulham and Purley, and parts of the parishes of Tilehurst, Pangbourne, Tidmarsh, Whitchurch, and Englefield.	16,000	4,000
West Cheshire	To extend the limits of supply of the West Cheshire Water Company within the County of Chester.	—	—
	TOTAL £.	122,000	30,000
	TOTAL Gas and Water Provisional Orders £.	264,500	80,000

ELECTRIC LIGHTING PROVISIONAL ORDERS.

NAME OF ORDER.	OBJECT OF ORDER.	Capital Proposed to be Expended.
		£. s. d.
Aberdare Electric Lighting Order -	To authorise J. C. Howell (Limited) to supply electricity within a portion of the district of the Aberdare Local Board.	Not stated.
Barrow-in-Furness Corporation Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of Barrow-in-Furness to supply electricity within that borough.	25,000 - -
Bedford Electric Lighting Order -	To authorise the Bedford Electric Light Company (Limited) to supply electricity within the municipal borough of Bedford.	10,000 - -
Birmingham Electric Light and Power Order.	To authorise the Birmingham Electric Supply Company (Limited) to supply electricity within certain portions of the city of Birmingham.	60,000 - -
Buxton Electric Lighting Order -	To authorise the Buxton Local Board to supply electricity within the Urban Sanitary District of Buxton.	10,000 - -
Chelmsford Electric Lighting Order	To authorise Crompton and Company (Limited) to supply electricity within the borough of Chelmsford.	Not stated.
Chepping Wycombe Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of Chepping Wycombe to supply electricity within that borough.	5,800 - -
Chesterfield (Corporation) Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of Chesterfield to supply electricity within that borough.	15,000 - -
Clonmel Corporation Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of Clonmel to supply electricity within that borough and certain portions of the district of the Clonmel Union.	6,010 10 -
Collier-Marr Moss Side Electric Lighting Order.	To authorise the Collier-Marr Telephone and Electrical Manufacturing Company (Limited) to supply electricity within the Urban Sanitary District of Moss Side.	10,000 - -
Crystal Palace District Electric Lighting Order.	To authorise the Crystal Palace District Electric Supply Company (Limited) to supply electricity within portions of:—The district of the Beckenham Local Board, the borough of Croydon, the parish of Lambeth, the district of the Lewisham District Board of Works, and the parish of St. Giles,' Camberwell.	Not stated.
Grimsby (Corporation) Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of Grimsby to supply electricity within that borough.	45,000 - -
Guildford Electric Lighting Order	To authorise the Holloway Electricity Supply Company (Limited) to supply electricity within the borough of Guildford.	10,000 - -
Harrow Electric Lighting Order -	To authorise the Harrow Local Board to supply electricity within the Urban Sanitary District of Harrow.	13,260 - -

ELECTRIC LIGHTING PROVISIONAL ORDERS—*continued.*

NAME OF ORDER.	OBJECT OF ORDER.	Capital proposed to be Expended.
		£. s. d.
Leyton Local Board Electric Lighting Order.	To authorise the Leyton Local Board to supply electricity within their district.	25,000 – –
Monmouth Electric Lighting Order	To authorise the Mayor, Aldermen, and Burgesses of the borough of Monmouth to supply electricity within that borough.	7,500 – –
Oswestry Electric Lighting Order -	To authorise the Oswestry Electric Lighting and Power Company (Limited) to supply electricity within the borough of Oswestry.	5,000 – –
Peterborough Electric Lighting Order.	To authorise the Mayor, Aldermen, Citizens, and Burgesses of the city and borough of Peterborough to supply electricity within that city and borough.	15,000 – – (For portion of area of supply.)
Plymouth Corporation Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of Plymouth to supply electricity within that borough.	30,000 – –
St. Austell Electric Lighting Order	To authorise Veale and Company (Limited) to supply electricity within the district of the St. Austell Local Board.	Not stated.
St. Helens Corporation Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of St. Helens to supply electricity within that borough.	50,000 – –
Shropshire Electric Lighting Order	To authorise the Shropshire Electric Light and Power Company (Limited) to supply electricity within a portion of the borough of Shrewsbury.	12,000 – –
Stirling Electric Lighting Order -	To authorise the Caledonian Electric Supply Company (Limited) to supply electricity within the Royal Burgh of Stirling.	10,400 – –
Wakefield Corporation Electric Lighting Order.	To authorise the Mayor, Aldermen, and Citizens of the city of Wakefield to supply electricity within that city.	21,000 – –
West Hartlepool Electric Lighting Order.	To authorise the Mayor, Aldermen, and Burgesses of the borough of West Hartlepool to supply electricity within that borough.	10,000 – –
Yeadon Electric Lighting Order -	To authorise the Yeadon Local Board to supply electricity within their district.	7,000 – –
	TOTAL Electric Lighting Provisional Orders - - - £.	402,970 10 –

INDEX TO GROUPS IN GROUPING LIST.

RAILWAY AND CANAL BILLS.

England and Wales:	No. of Group.
Metropolitan	I.
South East District	II.
South West District	III.
North East District	IV.
North West District	V.
Midland and Eastern Counties	VI.
Wales	VII.
Scotland	VIII.
Ireland	IX.

	No. of Group.
TRAMWAY BILLS	X.
GAS AND WATER BILLS	XI.

GROUPING LIST.

Grouping.

RAILWAY AND CANAL BILLS.

Railway and Canal Bills.

England and Wales.

England and Wales.

I. Metropolitan.

I.—Metropolitan:

Central London Railway (Extension of Time) Bill.

Charing Cross, Euston, and Hampstead Railway Bill.

Ealing and South Harrow Railway Bill.

East London Water Bill.

II. South East District.

II.—South East District:

Brighton, Rottingdean, and Newhaven Direct Railway (Amendment) Bill.

Channel Bridge and Railway Company (Limited) Bill.

Grouping.

Railway and Canal Bills.

England and Wales.

II. South East District.

Channel Tunnel (Experimental Works) Bill.

London, Brighton, and South Coast Railway Bill.

London, Brighton, and South Coast Railway (Steam Vessels) Bill.

London, Chatham, and Dover Railway Bill.

South Eastern Railway Bill.

III.—South West District:

III. South West District.

Budleigh, Salterton Railway Bill.

Cornwall Minerals Railway Bill.

Easton and Church Hope Railway (Extension of Time) Bill.

Exeter, Teign Valley, and Chagford Railway (Extension of Time) Bill.

Great Western Railway (No. 2) Bill.

Great Western and Midland Railway Companies (Severn, and Wye, and Severn Bridge Railway) Bill.

Lambourn Valley Railway Bill.

North Cornwall Railway Bill.

Plymouth and Dartmoor Railway Bill.

Totnes, Paignton, and Torquay Railway Bill.

Truro and Newquay Junction Railway Bill.

IV.—North East District:

North East District.

East and West Yorkshire Union Railways Bill.

Hull and North Western Junction Railway (Abandonment) Bill.

Hull, Barnsley, and West Riding Junction (Railway and Dock) Bill.

North Eastern Railway Bill.

Grouping.

Railway and Canal Bills.

England and Wales.

V.
North West District.

V.—North West District:

Cockermouth, Keswick, and Penrith Railway Bill.

Furness Railway Bill.

Grand Canal Company Bill.

Lancashire and Yorkshire Railway Bill.

London and North Western Railway Bill.

Manchester, Sheffield, and Lincolnshire and Liverpool, St. Helens, and South Lancashire Railway Companies Bill.

Manchester Ship Canal Bill.

Mersey Railway (Rates and Charges) Bill.

Mersey Railway (Various Powers) Bill.

Rochdale Canal Bill.

Sheffield and South Yorkshire Navigation Company Bill.

Sheffield, Central Station and District Railways Bill.

South Yorkshire Junction Railway Bill.

West Lancashire Railway Bill.

VI.
Midland and Eastern Counties District.

VI.—Midland and Eastern Counties District:

Birmingham, North Warwickshire, and Stratford-upon-Avon Bill.

Great Northern Railway Bill.

Lancashire, Derbyshire, and East Coast Railway Bill.

Leicestershire and Northamptonshire Union and Grand Union Canals (Transfer) Bill.

London, Walthamstow, and Epping Forest Railway Bill.

Longton, Adderley Green, and Bucknall Railway (Transfer) Bill.

Manchester, Sheffield, and Lincolnshire Railway Bill.

Midland Railway Bill.

Oxford and Aylesbury Tramroad Bill.

Tottenham and Forest Gate Railway Bill.

Uxbridge and Rickmansworth Railway Bill.

VII.—Wales.

Barry Railway Bill.

Barry Dock and Railways Act, 1888 (*Amendment*) *Bill.*

Bute Docks, Cardiff, Bill.

Cardiff Corporation Bill.

Carmarthen, Pendine, and South Milford Haven Railway Bill.

East Denbighshire Railway Bill.

East Glamorgan Railway Bill.

Fishguard Bay Railway and Pier (Waterford and Wexford Railway and Rosslare Harbour Purchase) Bill.

Golden Valley Railway Bill.

Great Western Railway (No. 1.) Bill.

Milford Docks Bill.

Pontypridd Waterworks Company (Tramroad) Bill.

Port Talbot Railway and Docks Bill.

Shropshire Railway Bill.

Swansea Harbour Bill.

Taff Vale Railway Bill.

Worcester and Broom Railway (Abandonment) Bill.

VIII.—Scotland.

Caledonian Railway Bill.

Clyde Navigation Bill.

Dundee Suburban Railway Bill.

Glasgow District Subway Company Bill.

Great North of Scotland Railway Bill.

North British Railway Bill.

Peterhead Harbours Bill.

West Highland Railway (Mallaig Extension) Bill.

Grouping.

Railway and Canal Bills.

IX.

Ireland.

IX.—Ireland.

Bray and Enniskerry Railway Bill.

Drumcondra and North Dublin Link Railway Bill.

Dublin, Wicklow, and Wexford Railway, and City of Dublin Junction Railways Bill.

Enniskillen, Bundoran, and Sligo Railway Bill.

Midland, Great Western Railway of Ireland Bill.

Southern Railway Bill.

X.

Tramway Bills.

England and Wales.

X.—TRAMWAY BILLS.

England and Wales.

Bristol.

Harrow Road and Paddington.

London Tramways Company (Limited).

West London.

Scotland.

Scotland.

Aberdeen District.

XI.—GAS AND WATER BILLS.

Gas.

Carshalton Gas Bill.

Driffield Gas Bill.

Edinburgh and Leith Corporation Gas Bill.

Falkirk and District Gas Bill.

Falkirk Corporation Gas Bill.

Harrow and Stanmore Gas Bill.

Hebden Bridge Gas Bill.

Manchester Corporation Bill.

Paignton Gas Bill.

Plymouth and Stonehouse Gas Light and Coke Bill.

Preston Gas Bill.

Torquay Gas Bill.

Water.

Aberdare Local Board Water Bill.

Alloa Water Bill.

Bacup Corporation Water Bill.

Barnsley Corporation (Water) Bill.

Cardiff Corporation (Water) Bill.

Chesterfield Waterworks and Gas Light Company Bill.

Colne Valley and Central Middlesex Water Companies Bill.

Consett Waterworks Bill.

East London Water Bill.

Fulwood Local Board Bill.

Gloucester Corporation Bill.

Grouping.

XI.
Gas and Water Bills.

Water.

London County Council (Water) Bill.

Neath Corporation Water Bill.

Newcastle and Gateshead Water Bill.

Southend Waterworks Bill.

South Hants Water Bill.

Southwark and Vauxhall Water Bill.

Swindon Water Bill.

Swinton Local Board Bill.

Thames Conservancy Bill.

Torquay Water and Improvement Bill.

West Middlesex Waterworks Bill.

Gas and Water

GAS AND WATER.

Abertillery Local Board (Gas and Water) Bill.

Accrington Gas and Water Board Bill.

Ambleside District Gas and Water Bill.

Bury Corporation Bill.

Dundee Corporation Bill.

Kendal Corporation Gas and Water Bill.

Millom Local Board Bill.

AMALGAMATION, SALE, LEASE, OR TRANSFER OF RAILWAYS, &c.

Amalgamation of Railways.

THE following Bills contain provisions for the Amalgamation of certain Railway Companies, or for the Sale, Lease, or Transfer of certain Railways, &c.:—

The Caledonian Railway Bill provides for the acquisition by the Company of the Forfar and Brechin Railway.

The Channel Tunnel (Experimental Works) Bill provides that the Lords of the Treasury may require the tunnel (if made) to be transferred to them.

The Enniskillen, Bundoran, and Sligo Railway Bill proposes to remove doubts as to the provisions of the Great Northern Railway (Ireland) Act, 1892, with respect to the acquisition of the undertaking of the Enniskillen, Bundoran, and Sligo Railway Company.

The Fishguard Bay Railway and Pier (Waterford and Wexford Railway, and Rosslare Harbour Purchase) Bill proposes to vest the undertakings of the Waterford and Wexford Railway and of the Rosslare Harbour Commissioners in the Fishguard Bay Railway and Pier Company.

The Grand Canal Company's Bill proposes to authorise the amalgamation of the Barrow Navigation Company with the Grand Canal Company.

The Great Northern Railway Bill proposes to dissolve the Hunslet Company, and transfer its powers to Company, to transfer the Halifax High Level Railway to Company and the Lancashire and Yorkshire Railway Company, and to confirm an agreement with regard to the leasing of the Stamford and Essendine Railway.

The Great Western and Midland Railway Companies (Severn and Wye and Severn Bridge Railway) Bill provides for vesting in the Great Western and Midland Railway Companies the undertaking of the Severn and Wye and Severn Bridge Railway Company; to vest in the two Companies jointly the Gloucester and Berkeley New Docks Branch of the Midland Railway; and provide for a joint committee of the two Companies who may apply corporate funds.

The Great Western Railway (No. 1) Bill proposes to amalgamate the Tiverton and North Devon and the Oldbury Railway Companies with the Company.

The Lambourn Valley Railway Bill proposes to empower the Company and the Great Western Railway Company to enter into agreements for the transfer or lease of railway to the latter Company.

The Leicestershire and Northamptonshire Union and Grand Union Canals (Transfer) Bill proposes to authorise the transfer of the Leicestershire and Northamptonshire Union Canal, and of the Grand Union Canal to the Company of the Proprietors of the Grand Junction Canal.

Amalgamation of Railways.

The Longton, Adderley Green, and Bucknall Railway (Transfer) Bill provides for vesting the undertakings of the Longton, Adderley Green, and Bucknall Railway Company in the North Staffordshire Railway Company.

The North Eastern Railway Bill proposes to authorise the sale or abandonment of the Boroughbridge and Ripon Canal; to dissolve the Wear Valley Railway Company, and transfer its powers to the Company.

The Peterhead Harbours Bill proposes to empower the trustees of the Harbour of Peterhead, to purchase, and the Great North of Scotland Railway Company to sell, a certain portion of the Harbour Branch Railway.

The Sheffield and South Yorkshire Navigation Company's Bill proposes to make further provisions with respect to the transfer to the Sheffield and South Yorkshire Navigation Company of certain of the Canal Undertakings of the Manchester, Sheffield, and Lincolnshire Railway Company.

The South Eastern Railway Bill proposes to confer further powers upon the Company, with regard to leasing, &c., of hotels.

The South Yorkshire Junction Railway Bill proposes to vest the Company's general undertaking in the Great Eastern Railway Company.

The Taff Vale Railway Bill proposes to vest in the Company the undertaking of the Cowbridge and Aberthaw Railway Company.

Board of Trade,
March 1894.

COURTENAY BOYLE.

APPENDIX.

1. LIST of BILLS in respect of which REPORTS under Standing Order 145A. of the House of Commons will be required:—

Bangor Corporation (Pier, &c.)

Birmingham, North Warwickshire, and Stratford-upon-Avon Railway.

Bray and Enniskerry Railway.

Budleigh Salterton Railway.

Bute Docks, Cardiff.

Carmarthen, Pendine, and South Milford Haven Railway.

Channel Bridge and Railway Company.

Clyde Navigation.

Drumcondra and North Dublin Link Railway.

Ealing and South Harrow Railway.

East Denbighshire Railway.

East Glamorgan Railway.

Exeter, Teign Valley, and Chagford Railway (Extension of Time).

Great Western Railway (No. 2).

London, Walthamstow, and Epping Forest Railway.

Mersey Railway (Rates and Charges).

Peterhead Harbours.

Port Talbot Company.

Sheffield Central Station and District Railway.

Thames Conservancy.

Torquay Water and Improvement.

Totnes, Paignton, and Torquay Railway.

Truro and Newquay Junction Railway.

Uxbridge and Rickmansworth Railway.

West Highland Railway (Mallaig Extension).

West London Tramways.

2. LIST of BILLS containing powers of purchase, &c., in respect of which it may be necessary for the Board of Trade to issue Certificates of compliance with Standing Orders 122, House of Lords, and 163, House of Commons, as regards the paid-up Capital and Expenditure of the Companies :—

Caledonian Railway.

Fishguard Bay Railway and Pier (*Waterford and Wexford Railway and Rosslare Harbour Purchases*).

Great Northern Railway.

Great Western Railway (*No.* 1).

Great Western and Midland Railway Companies (*Severn and Wye and Severn Bridge Railway*).

Lambourn Valley Railway.

Longton, Adderley Green, and Bucknall Railway (*Transfer*).

North Cornwall Railway.

North Eastern Railway.

South Yorkshire Junction Railway.

Taff Vale Railway.

---

3. LIST of BILLS in respect of which REPORTS are required to be made by the Board of Trade under Standing Order 158A, House of Commons, with regard to Abandonments and Release of Deposits :—

Brighton, Rottingdean, and Newhaven Direct Railway (*Abandonment*).

East and West Yorkshire Union Railways.

Great Northern Railway.

Hull and North Western Junction Railway (*Abandonment*).

Lancashire, Derbyshire, and East Coast Railway.

Mersey Railway (*Various Powers*).

Shropshire Railway.

South Eastern Railway.

Worcester and Broom Railway.

---

4. LIST of BILLS for which REPORTS are required to be made with regard to Level Crossings and Inclination of Roads, under Standing Orders 154 and 155 :—

Budleigh Salterton Railway.

Cardiff Corporation.

Drumcondra and North Dublin Link Railway.

East Denbighshire Railway.

East Glamorgan Railway.

Great North of Scotland Railway.

Great Western (No. 1) Railway.

Great Western (No. 2) Railway.

Lancashire and Yorkshire Railway.

London, Brighton, and South Coast Railway.

London, Walthamstow, and Epping Forest Railway.

Manchester, Sheffield, and Lincolnshire Railway.

Midland Railway.

Midland Great Western Railway.

North Cornwall Railway.

Oxford and Aylesbury Tramroad.

Pontypridd Water.

Port Talbot Railway and Docks.

Sheffield Central Station Railway.

Totnes, Paignton, and Torquay Railway.

Truro and New Quay Junction Railway.

West Highland Railway.

Uxbridge and Rickmansworth Railway.

REPORT by the Board of Trade upon all the Railway, Canal, Tramway, Gas, and Water Bills and Provisional Orders of Session 1894.

(*Mr. Burt.*)

Ordered, by The House of Commons, *to be Printed,*
20 *March* 1894.

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39. *Under* 4 *oz.*

RAILWAY RETURNS

FOR

ENGLAND AND WALES,

SCOTLAND,

AND

IRELAND.

For the Year 1893.

Pursuant to the Act 34 *&* 35 *Vict. cap.* 78.

WITH SUMMARY TABLES FOR UNITED KINGDOM
For each Year from 1854 to 1893, &c.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

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CONTENTS.

SUMMARY TABLES:

	Page
For United Kingdom, in each year from 1854 to 1893	iv
For England and Wales, Scotland, and Ireland, for the years 1889 to 1893:	
No. 1. Amount of Ordinary, Guaranteed, and Preferential Capital, classed according to the Rate per Cent. of Dividend Paid:—In England and Wales	vi
No. 2. „ „ In Scotland	viii
No. 3. „ „ In Ireland	x
No. 4. „ „ In the United Kingdom	xii
No. 5. Amount of Loans and Debenture Stock, classed according to the Rate per Cent. of Interest at which borrowed:— In England and Wales	xiv
No. 6. „ „ In Scotland	xiv
No. 7. „ „ In Ireland	xvi
No. 8. „ „ In the United Kingdom	xvi
For England and Wales, Scotland, and Ireland, for 1893:	
No. 1. Capital	xviii
No. 2. Traffic and Receipts	xviii
No. 3. Working Expenditure, Net Receipts, and Rolling Stock	xviii

GENERAL RETURNS FOR EACH RAILWAY COMPANY FOR 1893:

No. 1.	Amount of Authorised and Paid up Capital (showing also nominal additions):	
	In England and Wales	2
	In Scotland	32
	In Ireland	38
No. 1A.	Amount to be contributed from Public Funds towards the Construction of Railways authorised under the Light Railways (Ireland) Act, 1889, the Railways (Ireland) Act, 1890, and the Transfer of Railways (Ireland) Act, 1890	46
No. 2.	Number of Passengers, and Quantity of Goods Conveyed, and Receipts therefrom:	
	In England and Wales	48
	In Scotland	60
	In Ireland	62
No. 2A.	Number of Miles of Single, Double, Treble, and Quadruple or more Lines of Rails:	
	In England and Wales (for Principal Companies)	58
	In Scotland	60
	In Ireland	64
No. 3	Amount of Working Expenditure, and of Net Receipts, and Number of each Kind of Rolling Stock:	
	In England and Wales	68
	In Scotland	80
	In Ireland	82
Appendix	Statement of the Receipts from each Class of Season and Periodical Tickets, including Workmen's Weekly Tickets with Third Class:	
	In England and Wales	88
	In Scotland	91
	In Ireland	92

Commercial, Labour, and Statistical Department,
Board of Trade,
Whitehall Gardens, June 1894.

R. GIFFEN.

Notes.—The following Companies had not made returns at the time of going to press, and the question of proceeding against them has been referred to the Solicitor:—

Cheadle Railway Mineral and Land Company; Forest of Dean Central; Maenclochog; Ballinrobe and Claremorris Light; and Loughrea and Attymon Light. The paid-up capital of the Ballinrobe and Claremorris Company on 31st October 1892 was 71,640*l.* (guaranteed), and that of the Loughrea and Attymon Company at the same date was 54,445*l.* (guaranteed).

Returns of traffic and expenditure could not be furnished for the Halifax High Level, and Pontypridd, Caerphilly, and Newport Railways because the Companies working the lines had not agreed as to the accounts.

In order to exhibit the Traffic of Season Ticket Passengers on a uniform Plan, the Companies were requested to divide the Number of Tickets issued for shorter periods than a Year by the number of such periods in a Year, and to return the result arrived at as the equivalent number of Annual Season Tickets issued. In the case of Companies which have adopted this suggestion the Numbers given are distinguished in the Return by a Note.

SUMMARY TABLE for UNITED

LENGTH of LINES, CAPITAL, PASSENGERS CONVEYED,

YEAR.	LENGTH OF LINE OPEN FOR TRAFFIC AT THE END OF EACH YEAR.			CAPITAL AUTHORISED.			CAPITAL PAID UP.						
	Double or more.	Single.	TOTAL	By Shares and Stock.	By Loans and Debenture Stock.	TOTAL.	Ordinary.	Guaranteed.	Preferential.	Loans.	Debenture Stock.	TOTAL.	Per Mile of Line open.
	Miles.	*Miles.*	*Miles.*	£	£	£	£	£		£	£	£	£
1854	6,103	1,950	8,053	276,000,577	92,383,731	368,384,308	166,030,866	49,377,952		70,660,036	Cannot be given for these years.	286,068,794	35,523
1855	6,153	2,182	8,335	280,628,621	94,343,345	374,971,966	169,605,442	52,818,026		75,161,241		297,584,709	35,703
1856	6,266	2,444	8,710	282,990,751	94,377,156	377,767,907	173,446,109	56,789,558		77,359,419		307,595,086	35,315
1857	6,357	2,682	9,039	288,013,644	99,038,090	387,051,734	178,624,394	58,126,627		78,406,237		315,157,258	34,866
1858	—	—	9,542	292,248,276	100,434,479	392,682,755	181,837,781	61,854,547		81,683,179		325,375,507	34,099
1859	—	—	10,002	285,434,181	98,282,170	383,716,351	184,560,019	63,555,179		80,628,116	5,619,614	334,362,928	33,430
1860	6,690	3,743	10,433	298,685,142	100,729,685	399,414,827	190,790,867	67,873,840		81,888,546	7,576,874	348,130,127	33,368
1861	6,893	3,972	10,865	322,369,654	107,503,292	429,872,946	193,591,991	73,784,336		87,144,443	7,806,568	362,327,338	33,349
1862	7,009	4,542	11,551	338,777,276	111,819,462	450,596,738	197,077,589	87,792,380		89,683,373	10,665,096	385,218,438	33,349
1863	7,270	5,052	12,322	355,700,795	119,298,750	474,999,545	204,597,257	97,496,291		89,641,525	12,480,729	404,215,802	32,804
1864	7,402	5,387	12,789	390,413,137	130,109,197	520,522,334	214,947,054	104,647,626		93,075,392	13,049,541	425,719,613	33,288
1865	7,593	5,786	13,289	432,889,245	143,402,418	576,291,663	219,598,196	124,263,475		97,821,097	13,795,375	455,478,143	34,275
1866	7,711	6,143	13,854	466,151,633	154,412,773	620,564,406	228,245,629	134,455,098		105,065,863	14,105,594	481,872,184	34,782
1867	7,844	6,403	14,247	481,447,440	161,405,968	642,853,408	233,023,854	143,209,357		110,392,559	15,637,117	502,262,887	35,254
							£	£	£				
1868	—	—	14,628	455,895,068	159,550,550	*615,445,618	224,133,427	28,891,356	124,940,707	108,428,865	25,286,500	511,680,855	34,979
1869	—	—	†15,145	449,087,573	160,180,080	609,267,653	226,788,133	25,203,671	130,553,989	101,729,398	34,504,570	§518,779,761	34,254
1870	—	—	†15,537	437,963,372	158,215,010	596,178,382	229,282,150	36,188,320	122,503,764	90,713,779	51,220,660	§529,908,673	34,106
1871	8,338	7,038	15,376	451,898,908	163,827,982	615,726,890	230,234,058	64,552,793	108,496,620	82,095,545	67,282,535	552,661,551	35,943
1872	8,512	7,302	15,814	472,419,873	172,169,480	644,589,353	239,039,089	63,904,313	114,760,361	66,224,217	85,981,511	‡569,047,346	35,984
1873	8,687	7,395	16,082	497,922,723	178,763,863	676,686,586	244,449,805	66,187,541	121,939,528	55,888,314	99,855,120	588,320,308	36,574
1874	8,749	7,700	16,449	518,980,250	185,358,049	704,338,299	248,528,241	71,207,480	129,723,149	49,266,070	111,170,991	609,895,931	37,078
1875	8,898	7,760	16,658	529,900,023	187,875,675	717,775,698	254,600,732	77,912,315	134,281,009	40,420,754	123,008,684	630,223,494	37,833
1876	9,169	7,703	16,872	549,095,705	192,706,822	741,802,527	262,008,883	80,779,671	148,128,321	32,552,415	134,745,486	§§ 658,214,776	§§ 39,012
1877	9,235	7,842	17,077	559,699,466	197,687,362	757,386,828	265,041,233	73,365,705	163,682,448	28,874,496	143,095,166	674,059,048	39,472
1878	9,412	7,921	17,333	579,372,262	199,500,310	778,872,572	265,675,340	86,121,162	172,495,984	24,336,996	149,865,672	§§ 698,545,154	§§ 40,301
1879	9,671	8,025	17,696	586,693,445	202,898,130	789,591,575	266,914,656	88,235,286	182,483,758	22,451,416	156,918,353	717,003,469	40,518
1880	9,803	8,130	17,933	596,248,649	205,765,355	802,014,004	270,496,503	91,004,931	185,056,783	18,728,424	163,030,207	728,316,848	40,613
¶1881	9,873	8,302	18,175	617,998,561	213,128,751	831,127,312	275,935,904	92,076,563	192,889,001	17,079,636	167,547,058	745,528,162	41,019
1882	10,044	8,413	18,457	653,605,119	224,105,886	877,711,005	283,574,028	93,935,014	201,114,958	17,042,059	172,233,511	767,899,570	41,605
1883	10,105	8,576	18,681	671,899,467	233,001,674	**904,951,141	293,437,106	94,672,823	200,888,198	15,323,505	180,599,680	784,921,312	42,017
1884	10,239	8,625	18,864	681,414,345	238,641,635	**920,106,030	298,983,446	95,603,613	205,809,234	14,793,420	186,274,654	801,464,367	42,486
1885	10,446	8,723	19,169	686,333,835	241,360,153	**927,743,988	302,254,759	96,021,414	212,107,749	13,356,875	192,117,258	815,858,055	42,561
1886	10,528	8,804	19,332	698,695,305	243,070,235	941,765,540	305,202,082	97,082,467	217,369,177	12,833,579	195,856,949	828,344,254	42,848
1887	10,592	8,986	19,578	705,509,916	246,128,092	951,638,008	314,795,317	97,372,702	221,451,683	12,422,594	199,929,358	845,971,654	43,210
1888	10,772	9,040	19,812	718,201,513	252,362,643	970,564,156	322,338,446	97,706,609	225,798,210	11,091,289	207,761,409	864,695,963	43,645
1889	10,853	9,090	19,943	726,270,010	255,897,184	982,167,191	326,229,558	98,036,515	229,410,112	9,603,711	213,315,270	876,595,166	43,955
1890	10,989	9,084	20,073	738,492,132	266,037,032	1,004,529,164	332,070,153	98,796,917	234,092,086	9,340,185	223,172,685	897,472,026	44,710
1891	11,065	9,126	20,191	756,775,874	279,735,666	1,036,511,540	340,361,063	99,768,619	239,414,226	10,576,268	229,304,945	919,425,121	45,536
1892	11,158	9,167	20,325	765,522,609	287,084,056	1,052,606,665	347,700,876	100,906,005	244,613,151	12,015,301	239,121,987	944,357,320	46,463
1893	‡‡11,272	9,374	20,646	784,704,633	306,194,147	1,090,898,780	354,276,789	101,948,317	248,741,197	13,680,671	252,676,379	971,323,353	47,047

* The authorised capital of several companies, having merely a nominal existence, has been omitted in 1868 and subsequent years.

† Number of miles constructed. ‡ Including 37,855*l.* Capitalized Rentcharge. § Stock and Share Capital received.

‡‡ See also Table No. 2 A, pp. 58, 60, and 64.

§§ There was a large nominal increase in the capital of some companies from the consolidation of stocks.

** Including 50,000*l.* which may be raised by Ordinary Capital or Debenture Stock.

KINGDOM in each Year from 1854 to 1893.

Gross and Net Receipts, and Working Expenses.

Number of Passengers conveyed, exclusive of Season Ticket Holders.	Gross Receipts. From Passenger Traffic.†† Total.	From Passenger Traffic.†† Proportion to Total Receipts.	From Goods Traffic. Total.	From Goods Traffic. Proportion to Total Receipts.	Total from Traffic. Total.	Total from Traffic. Per Mile of Line open.	Total from Traffic. Per Train Mile.	Miscellaneous. Rents, Tolls, Navigation, Steamboats, &c.	Miscellaneous. Proportion to Total Receipts.	Total from all Sources.	Working Expenditure. Total.	Working Expenditure. Proportion to Total Receipts.	Net Receipts. Total.	Net Receipts. Proportion to Total paid up Capital.	Year.
No.	£	*Per Cent.*	£	*Per Cent.*	£	£	*s. d.*	£	*Per Cent.*	£	£	*Per Cent.*	£	*Per Cent.*	
111,180,165	10,244,954	50·68	9,970,770	49·32	20,215,724	2,510	5 6½								1854
118,567,170	10,694,790	49·73	10,812,809	50·27	21,507,599	2,580	5 9½								1855
129,315,196	11,376,337	49·11	11,789,156	50·89	23,165,493	2,660	5 11¼								1856
138,971,240	11,888,219	49·18	12,286,392	50·82	24,174,611	2,674	5 9½				Cannot be given for these years.				1857
139,141,135	11,697,906	48·83	12,258,845	51·17	23,956,751	2,511	5 6								1858
149,757,294	12,537,493	48·70	13,206,009	51·30	25,743,502	2,574	5 6								1859
163,435,678	13,085,756	47·13	14,680,866	52·87	27,766,622	2,661	5 5				13,187,368	47	14,579,254	4·19	1860
173,721,139	13,326,475	46·65	15,238,880	53·35	28,565,355	2,629	5 5				13,843,337	48	14,722,018	4·06	1861
180,429,071	13,911,985	47·76	15,216,573	52·24	29,128,558	2,522	5 4½				14,268,409	49	14,860,149	3·86	1862
204,635,075	14,521,528	46·61	16,634,869	53·39	31,156,397	2,529	5 4				15,027,234	48	16,129,163	3·99	1863
229,272,165	15,684,040	46·11	18,331,524	53·89	34,015,564	2,660	5 3				16,000,308	47	18,015,256	4·23	1864
251,862,715	16,572,051	46·17	19,318,062	53·83	35,890,113	2,701	5 1¾				17,149,073	48	18,741,040	4·11	1865
274,293,668	17,395,925	45·58	20,768,429	54·42	38,164,354	2,755	5 4				18,811,673	49	19,352,681	4·02	1866
287,688,113	17,935,634	45·43	21,544,365	54·57	39,479,999	2,771	5 3½				19,848,952	50	19,631,047	3·91	1867
—	‖	—	‖	—	‖	—	—	‖	—	‖	‖	—	‖	—	1868
312,759,053	18,811,504	44·06	22,263,817	52·15	41,075,321	2,712	5 2½	1,620,606	3·80	42,695,927	20,780,078	49	21,915,849	4·22	1869
336,545,397	19,301,911	42·82	24,115,159	53·50	43,417,070	2,794	5 1½	1,661,073	3·68	45,078,143	21,715,525	48	23,362,618	4·41	1870
375,220,754	20,622,580	42·18	26,484,978	54·17	47,107,558	3,064	5 3	1,785,222	3·65	48,892,780	23,152,860	47	25,739,920	4·66	1871
422,874,822	22,287,555	41·87	29,016,559	54·50	51,304,114	3,244	5 4½	1,931,396	3·63	53,235,510	26,277,640	49	26,957,870	4·74	1872
455,320,188	23,853,892	41·31	31,821,529	55·11	55,675,421	3,462	5 7¾	2,066,579	3·58	57,742,000	30,752,848	53	26,989,152	4·59	1873
477,840,411	24,893,615	42·01	32,005,883	54·01	56,899,498	3,459	5 8	2,356,217	3·98	59,255,715	32,612,712	55	26,643,003	4·37	1874
506,975,234	25,714,681	41·99	33,268,072	54·33	58,982,753	3,541	5 7½	2,254,247	3·68	61,237,000	33,220,728	54	28,016,272	4·45	1875
534,494,069	26,163,551	42·05	33,754,317	54·25	59,917,868	3,551	5 6¾	2,297,907	3·69	62,215,775	33,535,509	54	28,680,266	4·36	1876
549,541,325	26,534,110	42·13	34,109,947	54·17	60,644,057	3,551	5 6¾	2,329,271	3·70	62,973,328	33,857,978	54	29,115,350	4·32	1877
565,024,455	26,889,614	42·78	33,564,761	53·39	60,454,375	3,488	5 5¾	2,408,299	3·83	62,862,674	33,189,368	53	29,673,306	4·25	1878
562,732,890	25,915,585	41·95	33,479,697	54·19	59,395,282	3,356	5 3	2,381,421	3·86	61,776,703	32,045,273	52	29,731,430	4·15	1879
603,885,025	27,200,464	41·53	35,761,303	54·60	62,961,767	3,511	5 2⅝	2,529,858	3·86	65,491,625	33,601,124	51	31,890,501	4·38	1880
623,047,787	27,461,645	41·26	36,446,592	54·76	63,908,237	3,516	5 1¾	2,649,205	3·98	66,557,442	34,602,616	52	31,954,826	4·29	1881¶
654,838,295	28,796,813	41·51	37,740,315	54·40	66,537,128	3,605	5 2	2,839,996	4·09	69,377,124	36,170,436	52	33,206,688	4·32	1882
683,718,137	29,508,733	41·53	38,701,319	54·46	68,210,052	3,651	5 1	2,852,218	4·01	71,062,270	37,368,562	53	33,693,708	4·29	1883
694,991,860	30,030,450	42·58	37,670,592	53·42	67,701,042	3,589	5 0	2,821,601	4·00	70,522,643	37,217,197	53	33,305,446	4·16	1884
697,213,031	29,773,022	42·80	36,871,945	53·01	66,644,967	3,477	4 10	2,910,807	4·19	69,555,774	36,787,957	53	32,767,817	4·02	1885
725,584,390	30,244,938	43·46	36,370,439	52·26	66,615,377	3,446	4 10	2,976,576	4·28	69,591,953	36,518,247	52	33,073,706	3·99	1886
733,678,531	30,573,287	43·09	37,341,299	52·64	67,914,586	3,469	4 10	3,028,790	4·27	70,943,376	37,063,266	52	33,880,110	4·00	1887
742,499,164	30,984,090	42·51	38,755,780	53·16	69,739,870	3,520	4 9½	3,154,795	4·33	72,894,665	37,762,167	52	35,132,558	4·06	1888
775,183,073	32,630,724	42·36	41,086,333	53·34	73,717,057	3,696	4 10½	3,307,960	4·30	77,025,017	40,094,116	52	36,930,901	4·21	1889
817,744,046	34,327,965	42·94	42,220,382	52·81	76,548,347	3,813	4 10½	3,400,355	4·25	79,948,702	43,188,556	54	36,760,146	4·10	1890
845,463,668	35,130,916	42·92	43,230,717	52·81	78,361,633	3,881	4 10	3,498,974	4·27	81,860,607	45,144,778	55	‖‖36,731,624	4·00	1891
864,435,388	35,662,316	43·44	42,866,498	52·22	78,529,314	3,364	4 9½	3,562,726	4·34	82,092,040	45,717,965	56	36,374,075	3·85	1892
873,177,052	35,849,449	44·46	40,994,637	50·84	76,84 4,086	3,722	4 9½	3,787,806	4·70	80,631,892	45,695,119	57	34,936,773	3·60	1893

‖ Cannot be given for this year, several Companies having omitted to make the necessary returns.

†† Including Receipts from Season Tickets, Carriages, Horses, &c., and Post Office Mails.

¶ The returns for the Great Western Railway Company for this year were for eleven months only, the Company having changed the date to which its accounts were made up.

‖‖ Including 15,795*l.* received by the South-Eastern Company from the London, Brighton, and South Coast Company.

SUMMARY TABLES FOR ENGLAND AND WALE

No. 1.—Amount of Ordinary, Guaranteed, and Preferential Stock and Share Capital of Railw of the Years 18

Rate per Cent. of Dividend paid.	England and Wales. - - - -						
	Ordinary.						
	1889.	1890.	1891.	1892.	1893.	1889.	1890.
Capital of New Companies the Lines of which were in course of construction :	£	£	£	£	£	£	£
No Dividend paid - - -	1,729,608	1,515,289	5,555,591	5,763,540	5,183,675	—	—
3 per Cent. paid - - -	—	—	—	113,680	924,027	—	—
3½ „ „ - - -	214,252	33,760	73,570	133,720	195,300	—	145,0
4 „ „ - - -	2,279,518	3,563,683	—	—	—	—	—
5 „ „ - - -	24,247	8,577	—	—	—	—	—
Capital of Constructed Lines upon which no Dividend was paid - - -	35,284,371	36,235,027	33,481,432	36,123,373	46,884,199	36,200	66,0
Dividends paid:							
Not exceeding 1 per Cent. - -	2,218,530	756,504	4,181,981	1,425,414	14,628,020	—	—
Exceeding 1 and not exceeding 2 per Cent. - -	1,103,367	1,114,813	1,778,925	9,071,320	9,851,031	101,180	101,1
„ and not exceeding 3 per Cent. - -	23,377,431	28,887,113	37,151,562	25,235,700	15,100,003	—	—
„ 3 and not exceeding 4 per Cent. - -	9,200,672	13,017,355	37,082,951	49,094,172	69,843,086	41,650,039	41,644,3
„ 4 and not exceeding 5 per Cent. - -	47,508,037	39,103,242	13,176,369	33,479,551	30,721,057	36,460,111	36,456,4
„ 5 and not exceeding 6 per Cent. - -	53,678,056	22,993,514	19,777,074	76,066,216	91,435,653	4,003,580	4,003,5
„ 6 and not exceeding 7 per Cent. - -	20,504,572	54,792,054	122,455,977	44,716,047	3,442,298	—	—
„ 7 and not exceeding 8 per Cent. - -	67,413,652	67,478,743	2,740,305	2,068,400	191,600	—	—
„ 8 and not exceeding 9 per Cent. - -	3,509,510	1,027,800	252,000	575,583	270,000	2,000	2,0
„ 9 and not exceeding 10 per Cent. - -	—	740,882	829,820	1,176,220	981,240	50,000	50,0
„ 10 and not exceeding 11 per Cent. - -	—	—	—	—	—	—	—
„ 11 and not exceeding 12 per Cent. - -	—	—	—	—	—	—	—
„ 12 and not exceeding 13 per Cent. - -	179,534	—	—	—	—	—	—
At 13½ per Cent. - -	—	—	—	—	—	—	—
„ 15 „ - -	—	—	—	—	—	—	—
Total England and Wales	268,225,357	271,266,356	278,537,557	285,042,936	289,651,189	82,303,110	82,468,0

* Including 350,000*l.* on which dividend accrued from 1st January 1893.

COTLAND, AND IRELAND, FOR THE YEARS 1889 to 1893.

MPANIES in ENGLAND and WALES, classed according to the Rate per Cent. of Dividend Paid, in each 90, 1891, 1892, and 1893.

ENGLAND AND WALES.								
ARANTEED.			PREFERENTIAL.					RATE per CENT. of DIVIDEND PAID.
1891.	1892.	1893.	1889.	1890.	1891.	1892.	1893.	
£	£	£	£	£	£	£	£	
2[illegible]20	166,250	250,000	350,630	18,080	4,050,342	4,295,395	4,316,079	Capital of New Companies the Lines of which were in course of construction : No Dividend paid.
—	—	—	—	—	—	—	—	3 per Cent. paid.
220,000	—	—	—	—	—	—	—	3½ „ „
—	—	—	2,392,751	3,398,866	—	—	—	4 „ „
—	—	—	—	—	—	—	—	5 „ „
36,200	416,000*	66,000	10,680,788	9,585,474†	9,758,627†	9,679,285	9,833,167	Capital of Constructed Lines upon which no Dividend was paid.
—	—	—	370,000	407,467	100,000	100,000	100,000	Dividends paid : Not exceeding 1 per Cent.
101,180	201,180	1,301,180	105,770	1,660,000	120,564	131,000	3,861,000	Exceeding 1 and not exceeding 2 per Cent.
—	—	100,000	1,377,403	1,320,858	2,173,276	2,905,000	7,917,426	„ 2 and not exceeding 3 per Cent.
1,642,072	42,806,207	43,018,483	126,054,351	122,978,269	134,060,207	137,074,298	137,004,536	„ 3 and not exceeding 4 per Cent.
3,456,001	36,513,921	36,512,851	40,081,548	46,793,712	40,476,878	40,937,726	35,671,923	„ 4 and not exceeding 5 per Cent.
4,775,580	4,005,580	4,003,580	2,360,995	2,375,635	2,375,655	1,576,675	1,546,395	„ 5 and not exceeding 6 per Cent.
2,000	—	2,000	—	13,540	—	—	5,340	„ 6 and not exceeding 7 per Cent.
—	—	—	13,540		5,340	—	—	„ 7 and not exceeding 8 per Cent.
—	—	—	—	—	—	5,340	—	„ 8 and not exceeding 9 per Cent.
50,000	50,000	50,000	—	—	—	—	—	„ 9 and not exceeding 10 per Cent.
—	—	—	—	—	—	—	—	„ 10 and not exceeding 11 per Cent.
—	—	—	—	—	—	—	—	„ 11 and not exceeding 12 per Cent.
—	—	—	165,000	—	—	—	—	„ 12 and not exceeding 13 per Cent.
—	—	—	—	—	—	—	—	At 13½ per Cent.
—	—	—	—	—	—	—	—	„ 15 „
3,308,853	84,159,138	85,304,094	183,952,776	188,551,901	193,120,889	196,704,719	200,255,866	TOTAL ENGLAND AND WALES.

† Including 356,210*l.* on which dividend accrued from 1st January 1892.

Summary Tables for England and Wales, Scotland,

No. 2.—Amount of Ordinary, Guaranteed, and Preferential Stock and Share Capital of Railway
Years 1889, 1890,

Rate per Cent. of Dividend paid.	SCOTLAND - - - - -						
	Ordinary.						
	1889.	1890.	1891.	1892.	1893.	1889.	1890.
	£	£	£	£	£	£	£
Capital of New Companies the Lines of which were in course of construction: No Dividend paid - - -	32,199	195,676	507,171	838,505	382,893	—	—
3 per Cent. paid - - -	—	—	—	—	655,220	—	—
4 „ „ - - -	2,125,000	—	—	—	—	—	—
5 „ „ - - -	—	—	—	—	465,272	—	—
Capital of Constructed Lines upon which no Dividend was paid - - -	4,910,002	4,797,331	4,998,961	4,426,287	4,369,898	—	—
Dividends paid: Not exceeding 1 per Cent. - -	200,000	9,355,415	9,163,650	9,548,239	9,398,452	—	—
Exceeding 1 and not exceeding 2 per Cent. - -	1,081,782	1,358,492	7,129,525	132,435	393,450	—	—
„ 2 and not exceeding 3 per Cent. - -	13,971,741	6,765,930	1,025,122	6,846,155	7,690,365	—	—
„ 3 and not exceeding 4 per Cent. - -	7,523,968	9,758,068	7,107,120	3,521,842	8,173,052	12,895,934	12,896,198
„ 4 and not exceeding 5 per Cent. - -	296,000	11,900,807	15,208,251	20,547,025	16,453,827	614,000	614,000
„ 5 and not exceeding 6 per Cent. - -	11,210,277	314,950	314,950	318,550	280,950	116,000	116,000
„ 6 and not exceeding 7 per Cent. - -	140,890	175,890	140,890	140,890	140,890	—	—
„ 7 and not exceeding 8 per Cent. - -	—	—	—	—	—	—	—
„ 8 and not exceeding 9 per Cent. - -	—	—	—	—	—	—	—
„ 9 and not exceeding 10 per Cent. - -	—	—	—	—	—	—	—
„ 10 and not exceeding 11 per Cent. - -	—	—	—	—	—	—	—
„ 11 and not exceeding 12 per Cent. - -	—	—	—	—	—	—	—
„ 12 and not exceeding 13 per Cent. - -	—	—	—	—	—	—	—
At 15 per Cent. - - -	—	—	—	—	—	—	—
Total Scotland - -	41,491,859	44,622,559	45,595,640	46,319,928	48,404,269	13,625,934	13,626,198

* Including 1,045,000*l.* on which dividend accrued from 1st August 1890.
† Dividend did not accrue until early in 1893.

AND IRELAND FOR THE YEARS 1889 TO 1893—*continued.*

COMPANIES in SCOTLAND, classed according to the Rate per Cent. of Dividend paid, in each of the 1891, 1892, and 1893.

SCOTLAND.								
GUARANTEED.			PREFERENTIAL.					RATE per CENT. of DIVIDEND PAID.
1891.	1892.	1893.	1889.	1890.	1891.	1892.	1893.	
£	£	£	£	£	£	£	£	Capital of New Companies the Lines of which were in course of construction:
—	—	—	—	—	—	—	—	No Dividend paid.
—	—	—	—	—	—	—	—	3 per Cent. paid.
—	—	—	—	—	—	—	—	4 „ „
—	—	—	—	—	—	—	—	5 „ „
—	—	—	1,105,000*	1,012,732†	1,269,000‡	2,493,319§	—	Capital of Constructed Lines upon which no Dividend was paid.
—	—	—	—	62,670	—	—	—	Dividends paid: Not exceeding 1 per Cent.
—	—	—	66,070	—	55,000	61,320	60,170	Exceeding 1 and not exceeding 2 per Cent.
—	—	—	—	—	7,560	—	—	„ 2 and not exceeding 3 per Cent.
12,896,198	12,896,198	12,896,198	25,927,169	25,845,640	26,170,075	26,526,941	29,939,899	„ 3 and not exceeding 4 per Cent.
614,000	614,000	614,000	9,695,152	9,934,925	9,934,925	9,934,925	9,679,925	„ 4 and not exceeding 5 per Cent.
116,000	116,000	116,000	638,939	638,939	638,939	638,939	638,939	„ 5 and not exceeding 6 per Cent.
—	—	—	—	—	—	—	—	„ 6 and not exceeding 7 per Cent.
—	—	—	—	—	—	—	—	„ 7 and not exceeding 8 per Cent.
—	—	—	—	—	—	—	—	„ 8 and not exceeding 9 per Cent.
—	—	—	—	—	—	—	—	„ 9 and not exceeding 10 per Cent.
—	—	—	—	—	—	—	—	„ 10 and not exceeding 11 per Cent.
—	—	—	—	—	—	—	—	„ 11 and not exceeding 12 per Cent.
—	—	—	—	—	—	—	—	„ 12 and not exceeding 13 per Cent.
—	—	—	—	—	—	—	—	At 15 per Cent.
13,626,198	13,626,198	13,626,198	37,432,330	37,494,906	38,075,499	39,655,444	40,318,933	TOTAL SCOTLAND.

‡ Including 1,004,000*l.* on which dividend accrued from 1st February 1893, and 265,000*l.* on which dividend accrued from May 1893.
§ Including 1,004,000*l.* on which dividend accrued from 1st February 1893, 1,124,319*l.* on which dividend accrued from 1st August 1893, and 365,000*l.* on which dividend accrued from 15th May 1893.

Summary Tables for England and Wales, Scotlan

No. 3.—Amount of Ordinary, Guaranteed, and Preferential Stock and Share Capital of Railwa 1889, 1890, 1891

Rate per Cent. of Dividend paid.	IRELAND - - - -						
	Ordinary.						
	1889.	1890.	1891.	1892.	1893.	1889.	1890.
	£	£	£	£	£	£	£
Capital of New Companies the Lines of which were in course of construction : No Dividend paid - - - - -	50,325	107,615	112,080	28,900	27,400	24,720	113,576
4 per Cent. paid - - -	231	—	—	—	—	284,922	113,225
5 „ „ - - - -	—	—	—	—	—	35,000	23,000
Capital of Constructed Lines upon which no Dividend was paid - - - - -	2,480,930	1,825,061	2,350,812	2,407,560	2,310,821	—	—
Dividends paid: Not exceeding 1 per Cent. - -	221,657	659,378	271,980	880,260	700,150	16,500	—
Exceeding 1 and not exceeding 2 per Cent. - -	700,150	818,490	700,150	91,812	210,380	—	—
„ 2 and not exceeding 3 per Cent - -	48,000	89,489	329,489	288,000	240,000	—	—
„ 3 and not exceeding 4 per Cent. - -	3,658,356	3,695,037	—	41,489	48,000	263,488	940,736
„ 4 and not exceeding 5 per Cent. - -	7,748,135	7,667,535	2,697,480	7,667,935	3,555,958	1,482,841	1,511,558
„ 5 and not exceeding 6 per Cent. - -	1,254,558	966,633	9,179,925	4,286,106	8,459,572	—	—
„ 6 and not exceeding 7 per Cent. - -	—	—	235,950	295,950	319,050	—	—
„ 7 and not exceeding 8 per Cent. - -	—	—	—	—	—	—	—
„ 8 and not exceeding 9 per Cent. - -	—	—	—	—	—	—	—
„ 9 and not exceeding 10 per Cent. - -	350,000	350,000	350,000	350,000	350,000	—	—
„ 10 and not exceeding 11 per Cent. - -	—	—	—	—	—	—	—
„ 11 and not exceeding 12 per Cent. - -	—	—	—	—	—	—	—
„ 12 and not exceeding 13 per Cent. - -	—	—	—	—	—	—	—
At 15 per Cent. - - -	—	—	—	—	—	—	—
Total Ireland -	16,512,342	16,179,238	16,227,866	16,338,012	16,221,331	2,107,471	2,702,095

AND IRELAND, FOR THE YEARS 1889 to 1893—*continued.*

COMPANIES in IRELAND, classed according to the Rate per Cent. of Dividend Paid, in each of the Years 1892, and 1893.

- - - - - IRELAND.								
GUARANTEED.			PREFERENTIAL.					RATE per CENT. of DIVIDEND PAID.
1891.	1892.	1893.	1889.	1890.	1891.	1892.	1893.	
£	£	£	£	£	£	£	£	
33,200	76,871	90,210	10,000	—	—	—	—	Capital of New Companies the Lines of which were in course of construction : No Dividend paid.
76,941	24,827	—	—	—	—	—	—	4 per Cent. paid.
—	—	—	—	—	—	—	—	5 „ „
51,895	71,640	2,560	431,390	461,390	461,390	481,390	394,800	Capital of Constructed Lines upon which no Dividend was paid.
—	—	—	—	—	—	—	—	Dividends paid : Not exceeding 1 per Cent.
—	—	—	44,150	—	—	—	—	Exceeding 1 and not exceeding 2 per Cent.
6,000	17,000	17,000	—	241,035	—	—	—	„ 2 and not exceeding 3 per Cent.
1,060,736	1,938,006	1,975,365	4,445,210	4,315,498	4,919,057	5,206,832	5,206,832	„ 3 and not exceeding 4 per Cent.
1,604,796	992,325	932,890	2,800,086	2,750,206	2,560,241	2,287,616	2,287,616	„ 4 and not exceeding 5 per Cent.
—	—	—	294,170	277,150	277,150	277,150	277,150	„ 5 and not exceeding 6 per Cent.
—	—	—	—	—	—	—	—	„ 6 and not exceeding 7 per Cent.
—	—	—	—	—	—	—	—	„ 7 and not exceeding 8 per Cent.
—	—	—	—	—	—	—	—	„ 8 and not exceeding 9 per Cent.
—	—	—	—	—	—	—	—	„ 9 and not exceeding 10 per Cent.
—	—	—	—	—	—	—	—	„ 10 and not exceeding 11 per Cent.
—	—	—	—	—	—	—	—	„ 11 and not exceeding 12 per Cent.
—	—	—	—	—	—	—	—	„ 12 and not exceeding 13 per Cent.
—	—	—	—	—	—	—	—	At 15 per Cent.
2,833,568	3,120,669	3,018,025	8,025,006	8,045,279	8,217,838	8,252,988	8,166,398	TOTAL IRELAND.

SUMMARY TABLES FOR ENGLAND AND WALES, SCOTLAND

No. 4.—AMOUNT of ORDINARY, GUARANTEED, and PREFERENTIAL STOCK and SHARE CAPITAL of RAILWA the Years 1889, 1890

RATE per CENT. of DIVIDEND PAID.	UNITED KINGDOM - - - -						
	ORDINARY.						
	1889.	1890.	1891.	1892.	1893.	1889.	1890.
	£	£	£	£	£	£	£
Capital of New Companies the Lines of which were in course of construction:							
No Dividend paid - - - -	1,812,132	1,818,580	6,174,842	6,630,945	5,593,968	24,720	113,576
3 per Cent. paid - - -	—	—	—	113,680	1,579,247	—	—
3½ „ „ - - -	214,252	33,760	73,570	133,720	195,300	—	145,000
4 „ „ - - -	4,404,749	3,563,683	—	—	—	284,922	113,225
5 „ „ - - -	24,247	8,577	—	—	465,272	35,000	23,000
Capital of Constructed Lines upon which no Dividend was paid - - -	42,675,303	42,857,419	40,831,205	42,957,220	53,564,918	36,200	66,000
Dividends paid : Not exceeding 1 per Cent. - -	2,640,187	10,771,297	13,617,611	11,853,913	24,726,622	16,500	—
Exceeding 1 and not exceeding 2 per Cent. - -	2,885,299	3,291,795	9,608,600	9,295,567	10,454,861	101,180	101,180
„ 2 and not exceeding 3 per Cent. - - -	37,397,172	35,742,532	38,506,173	32,369,855	23,030,368	—	—
„ 3 and not exceeding 4 per Cent. - -	20,382,996	26,470,460	44,190,071	52,657,503	78,064,138	54,809,461	55,481,315
„ 4 and not exceeding 5 per Cent. - - -	55,552,172	58,671,584	31,082,100	61,694,511	50,730,842	38,556,952	38,582,041
„ 5 and not exceeding 6 per Cent. - -	66,142,891	24,275,097	29,271,949	80,670,872	100,176,175	4,119,580	4,119,580
„ 6 and not exceeding 7 per Cent. - -	20,645,462	54,967,944	122,832,817	45,152,887	3,902,238	—	—
„ 7 and not exceeding 8 per Cent. - - -	67,413,652	67,478,743	2,740,305	2,068,400	191,600	—	—
„ 8 and not exceeding 9 per Cent. - - -	3,509,510	1,027,800	252,000	575,583	270,000	2,000	2,000
„ 9 and not exceeding 10 per Cent. - -	350,000	1,090,882	1,179,820	1,526,220	1,331,240	50,000	50,000
„ 10 and not exceeding 11 per Cent. - - -	—	—	—	—	—	—	—
„ 11 and not exceeding 12 per Cent. - -	—	—	—	—	—	—	—
„ 12 and not exceeding 13 per Cent. - - -	179,534	—	—	—	—	—	—
At 13½ per Cent. - - -	—	—	—	—	—	—	—
„ 15 „ - - - -	—	—	—	—	—	—	—
TOTAL UNITED KINGDOM -	326,229,558	332,070,153	340,361,063	347,700,876	354,276,789	98,036,515	98,796,917

† Including £350,000 on which dividend accrued from 1st January 1893.

AND IRELAND, FOR THE YEARS 1889 to 1893—*continued.*

COMPANIES in the UNITED KINGDOM, classed according to the Rate per Cent. of Dividend Paid, in each of 1891, 1892, and 1893.

UNITED KINGDOM.								
GUARANTEED.			PREFERENTIAL.					RATE per CENT. of DIVIDEND PAID.
1891.	1892.	1893.	1889.	1890.	1891.	1892.	1893.	
£	£	£	£	£	£	£	£	
59,020	243,121	340,210	360,630	18,080	4,050,342	4,295,395	4,316,079	Capital of New Companies the Lines of which were in course of construction: No Dividend paid.
—	—	—	—	—	—	—	—	3 per Cent. paid.
220,000	—	—	—	—	—	—	—	3½ „ „
76,941	24,827	—	2,392,751	3,398,866	—	—	—	4 „ „
—	—	—	—	—	—	—	—	5 „ „
88,095	487,640†	68,560	12,217,178*	11,059,596*	11,489,017*	12,653,994*	10,227,967	Capital of Constructed Lines upon which no Dividend was paid.
—	—	—	370,000	470,137	100,000	100,000	100,000	Dividends paid: Not exceeding 1 per Cent.
101,180	201,180	1,301,180	215,990	1,660,000	175,564	192,320	3,921,170	Exceeding 1 and not exceeding 2 per Cent.
6,000	17,000	117,000	1,377,403	1,561,893	2,180,836	2,905,000	7,917,426	„ 2 and not exceeding 3 per Cent.
55,599,006	57,640,411	57,890,046	156,426,730	153,139,407	165,149,339	168,808,071	172,151,267	„ 3 and not exceeding 4 per Cent.
38,674,797	38,120,246	38,059,741	52,576,786	59,478,843	52,972,044	53,160,267	47,639,464	„ 4 and not exceeding 5 per Cent.
4,891,580	4,121,580	4,119,580	3,294,104	3,291,724	3,291,744	2,492,764	2,462,484	„ 5 and not exceeding 6 per Cent.
2,000	—	2,000	—	13,540	—	—	5,340	„ 6 and not exceeding 7 per Cent.
—	—	—	13,540	—	5,340	—	—	„ 7 and not exceeding 8 per Cent.
—	—	—	—	—	—	5,340	—	„ 8 and not exceeding 9 per Cent.
50,000	50,000	50,000	—	—	—	—	—	„ 9 and not exceeding 10 per Cent.
—	—	—	—	—	—	—	—	„ 10 and not exceeding 11 per Cent.
—	—	—	—	—	—	—	—	„ 11 and not exceeding 12 per Cent.
—	—	—	165,000	—	—	—	—	„ 12 and not exceeding 13 per Cent.
—	—	—	—	—	—	—	—	At 13½ per Cent.
—	—	—	—	—	—	—	—	„ 15 „
99,768,619	100,906,005	101,948,317	229,410,112	234,092,086	239,414,226	244,613,151	248,741,197	TOTAL UNITED KINGDOM.

* *See* notes, pp. vii., viii., and ix.

SUMMARY TABLES FOR ENGLAND AND WALES, SCOTLAND,

No. 5.—AMOUNT of LOANS and DEBENTURE STOCK of RAILWAY COMPANIES in ENGLAND AND WALES, classed

RATE per CENT. of INTEREST.	ENGLAND AND WALES — LOANS.				
	1889.	1890.	1891.	1892.	1893.
	£	£	£	£	£
Not entitled to Interest	—	—	—	—	—
Rate of Interest: Not exceeding 1 per Cent.	—	—	—	—	—
Exceeding 1 and not exceeding 2 per Cent.	—	—	—	—	—
„ 2 and not exceeding 3 per Cent.	260,307	346,869	333,667	328,597	374,387
„ 3 and not exceeding 4 per Cent.	4,376,026	4,256,135	4,537,662	4,477,185	4,875,810
„ 4 and not exceeding 5 per Cent.	2,156,075	2,234,440	3,430,610	4,909,895	6,350,424
„ 5 and not exceeding 6 per Cent.	169,258	164,030	129,180	125,380	75,280
„ 6 and not exceeding 7 per Cent.	—	—	—	—	—
„ 7 and not exceeding 8 per Cent.	5,800	5,800	5,800	5,800	5,800
TOTAL ENGLAND AND WALES	6,967,466	7,007,274	8,436,919	9,846,857	11,681,701

No. 6.—AMOUNT of LOANS and DEBENTURE STOCK of RAILWAY COMPANIES in SCOTLAND, classed according

RATE per CENT. of INTEREST.	SCOTLAND — LOANS.				
	1889.	1890.	1891.	1892.	1893.
	£	£	£	£	£
Not entitled to Interest	—	—	—	—	—
Rate of Interest: Not exceeding 1 per Cent.	—	—	—	—	—
Exceeding 1 and not exceeding 2 per Cent.	—	—	—	—	—
„ 2 and not exceeding 3 per Cent.	121,511	141,690	135,425	132,607	152,514
„ 3 and not exceeding 4 per Cent.	1,183,245	957,622	853,964	884,806	811,937
„ 4 and not exceeding 5 per Cent.	127,510	112,060	43,510	43,060	43,060
„ 5 and not exceeding 6 per Cent.	—	—	—	—	—
TOTAL SCOTLAND	1,432,266	1,211,372	1,032,899	1,060,473	1,007,511

AND IRELAND, FOR THE YEARS 1889 to 1893—*continued.*

according to the Rate per Cent. of Interest at which borrowed, in each of the Years 1889, 1890, 1891, 1892, and 1893.

ENGLAND AND WALES.					
DEBENTURE STOCK.					RATE per CENT. of INTEREST.
1889.	1890.	1891.	1892.	1893.	
£	£	£	£	£	
—	—	—	—	367,365	Not entitled to Interest.
					Rate of Interest :
417,365	417,365	417,365	367,365	—	Not exceeding 1 per Cent.
131,901	131,901	131,901	79,071	50,000	Exceeding 1 and not exceeding 2 per Cent.
6,715,071	31,682,247	44,466,079	48,487,673	86,679,174	„ 2 and not exceeding 3 per Cent.
129,257,752	113,266,257	104,808,667	106,347,038	80,216,884	„ 3 and not exceeding 4 per Cent.
44,111,588	43,748,570	44,398,864	44,612,686	44,982,992	„ 4 and not exceeding 5 per Cent.
1,486,012	1,486,012	1,486,012	1,486,012	1,486,012	„ 5 and not exceeding 6 per Cent.
—	—	—	—	—	„ 6 and not exceeding 7 per Cent.
5,400	5,400	5,400	5,400	5,400	„ 7 and not exceeding 8 per Cent.
182,125,089	190,737,752	195,714,288	201,385,245	213,787,827	TOTAL ENGLAND AND WALES.

to the Rate per Cent. of Interest at which borrowed, in each of the Years 1889, 1890, 1891, 1892, and 1893.

SCOTLAND.					
DEBENTURE STOCK.					RATE per CENT. of INTEREST.
1889.	1890.	1891.	1892.	1893.	
£	£	£	£	£	
—	—	—	—	—	Not entitled to Interest.
					Rate of Interest :
—	—	—	—	—	Not exceeding 1 per Cent.
—	—	—	—	—	Exceeding 1 and not exceeding 2 per Cent.
73,538	73,537	73,537	12,221,735	12,497,573	„ 2 and not exceeding 3 per Cent.
19,845,863	21,028,838	22,044,051	15,442,354	15,639,584	„ 3 and not exceeding 4 per Cent.
2,082,187	2,082,187	2,082,187	390,033	390,033	„ 4 and not exceeding 5 per Cent.
—	—	—	—	—	„ 5 and not exceeding 6 per Cent.
22,001,588	23,184,562	24,199,775	28,054,122	28,527,190	TOTAL SCOTLAND.

SUMMARY TABLES FOR ENGLAND AND WALES,

No. 7.—AMOUNT of LOANS and DEBENTURE STOCK of RAILWAY COMPANIES in IRELAND, classed according

RATE per CENT. of INTEREST.	IRELAND — LOANS.				
	1889.	1890.	1891.	1892.	1893.
	£	£	£	£	£
Not entitled to Interest	—	—	—	300	300
Rate of Interest:					
Not exceeding 1 per Cent.	—	—	—	—	—
Exceeding 1 and not exceeding 2 per Cent.	—	—	—	—	—
„ 2 and not exceeding 3 per Cent.	—	—	—	—	—
„ 3 and not exceeding 4 per Cent.	799,368	730,094	775,290	820,456	760,894
„ 4 and not exceeding 5 per Cent.	388,811	375,645	315,360	271,415	214,465
„ 5 and not exceeding 6 per Cent.	15,800	15,800	15,800	15,800	15,800
TOTAL IRELAND	1,203,979	1,121,539	1,106,450	1,107,971	991,459

No. 8.—AMOUNT of LOANS and DEBENTURE STOCK of RAILWAY COMPANIES in the UNITED KINGDOM, classed

RATE per CENT. of INTEREST.	UNITED KINGDOM — LOANS.				
	1889.	1890.	1891.	1892.	1893.
	£	£	£	£	£
Not entitled to Interest	—	—	—	300	300
Rate of Interest:					
Not exceeding 1 per Cent.	—	—	—	—	—
Exceeding 1 and not exceeding 2 per Cent.	—	—	—	—	—
„ 2 and not exceeding 3 per Cent.	381,818	488,559	469,092	461,204	526,901
„ 3 and not exceeding 4 per Cent.	6,358,639	5,943,851	6,166,916	6,182,447	6,448,641
„ 4 and not exceeding 5 per Cent.	2,672,396	2,722,145	3,789,480	5,224,370	6,607,949
„ 5 and not exceeding 6 per Cent.	185,058	179,830	144,980	141,180	91,080
„ 6 and not exceeding 7 per Cent.	—	—	—	—	—
„ 7 and not exceeding 8 per Cent.	5,800	5,800	5,800	5,800	5,800
TOTAL UNITED KINGDOM	9,603,711	9,340,185	10,576,268	12,015,301	13,680,671

SCOTLAND, AND IRELAND, FOR THE YEARS 1889 to 1893—*continued*.

to the Rate per Cent. of Interest at which borrowed, in each of the Years 1889, 1890, 1891, 1892, and 1893.

IRELAND.					
DEBENTURE STOCK.					RATE per CENT. of INTEREST.
1889.	1890.	1891.	1892.	1893.	
£ —	£ —	£ —	£ —	£ —	Not entitled to Interest.
—	—	—	—	—	Rate of Interest: Not exceeding 1 per Cent.
—	—	—		—	Exceeding 1 and not exceeding 2 per Cent.
291,453	291,453	291,453	291,453	291,453	„ 2 and not exceeding 3 per Cent.
5,656,173	5,714,991	5,874,813	6,164,614	7,703,564	„ 3 and not exceeding 4 per Cent.
3,240,967	3,243,927	3,224,616	3,226,553	2,366,345	„ 4 and not exceeding 5 per Cent.
—	—	—	—	—	„ 5 and not exceeding 6 per Cent.
9,188,593	9,250,371	9,390,882	9,682,620	10,361,362	TOTAL IRELAND.

according to the Rate per Cent. of Interest at which borrowed, in each of the Years 1889, 1890, 1891, 1892, and 1893.

UNITED KINGDOM.					
DEBENTURE STOCK.					RATE per CENT. of INTEREST.
1889.	1890.	1891.	1892.	1893.	
£ —	£ —	£ —	£ —	£ 367,365	Not entitled to Interest.
417,365	417,365	417,365	367,365	—	Rate of Interest: Not exceeding 1 per Cent.
131,901	131,901	131,901	79,071	50,000	Exceeding 1 and not exceeding 2 per Cent.
7,080,062	32,047,237	44,831,069	61,000,861	99,468,200	„ 2 and not exceeding 3 per Cent.
154,759,788	140,010,086	132,727,531	127,954,006	103,560,032	„ 3 and not exceeding 4 per Cent.
49,434,742	49,074,684	49,705,667	48,229,272	47,739,370	„ 4 and not exceeding 5 per Cent.
1,486,012	1,486,012	1,486,012	1,486,012	1,486,012	„ 5 and not exceeding 6 per Cent.
—	—	—	—	—	„ 6 and not exceeding 7 per Cent.
5,400	5,400	5,400	5,400	5,400	„ 7 and not exceeding 8 per Cent.
213,315,270	223,172,685	229,304,945	239,121,987	252,676,379	TOTAL UNITED KINGDOM.

SUMMARY TABLES for ENGLAND and

No. 1.—CAPITAL

	AUTHORISED CAPITAL.			PAID-UP STOCK	
	By Shares and Stock.	By Loans and Debenture Stock.	TOTAL.	Ordinary.	Guaranteed.
	£	£	£	£	£
*ENGLAND AND WALES	644,800,238	259,565,265	904,365,503	289,651,189 *13,025,642*	85,304,094 *6,476,834*
SCOTLAND	109,230,434	33,563,350	142,793,784	48,404,269 *12,890,811*	13,626,198 *2,721,050*
*IRELAND	30,673,961	13,065,532	43,739,493	16,221,331 —	3,018,025 *141,354*
TOTAL UNITED KINGDOM	784,704,633	306,194,147	1,090,898,780	354,276,789 *25,916,453*	101,948,317 *9,340,338*

* *See* note, page iii.

No. 2.—TRAFFIC

	Length of Line in Miles open on 31st December 1893.			PASSENGER TRAFFIC. Number of Passengers conveyed (exclusive of Season and Periodical Tickets).				Holders of Season or Periodical Tickets.	GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
	Double or more.	Single.	Total.	1st Class.	2nd Class.	3rd Class (including Parliamentary).	TOTAL.		Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	TOTAL.
									Tons.	*Tons.*			
ENGLAND AND WALES	9,350	5,090	14,440	24,490,458	55,257,414	689,586,343	769,334,215	1,468,562	172,268,608	72,832,908	148,555,526	119,296,126	*268,290,372
									12,727				
SCOTLAND	1,311	1,904	3,215	4,070,914	431,178	75,625,684	80,127,776	76,449	34,503,200	9,529,340	19,751,651	18,064,792	†39,932,415
IRELAND	611	2,380	2,991	1,487,610	4,301,048	17,926,403	23,715,061	29,865	1,064,500	3,092,245	9,058,070	4,420,102	‡14,610,015
									37,719				
TOTAL UNITED KINGDOM	11,272	9,374	20,646	30,048,982	59,989,640	783,138,430	873,177,052	1,574,876	207,836,308	85,454,493	177,365,247	141,781,020	§322,841,802
									50,446				

* Including 447,720 miles run by mixed trains.

† Including 2,115,972 miles run by mixed trains.

No. 3.—WORKING EXPENDITURE, NET RECEIPTS, AND ROLLING STOCK.

	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE								
		Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.
	No.	£	£	£	£	£	£	£	£	£
ENGLAND AND WALES	14,440	6,222,574	10,578,459	3,275,745	12,296,925	1,691,968	2,289,530	264,775	108,453	224,762
			57,158							
SCOTLAND	3,215	845,974	1,250,774	480,322	1,440,249	183,686	213,875	21,922	12,495	15,100
IRELAND	2,991	418,191	469,697	140,288	501,609	102,290	84,391	—	6,360	5,582
TOTAL UNITED KINGDOM	20,646	7,486,739	12,298,930	3,896,355	14,238,783	1,977,924	2,587,796	286,697	127,308	245,444
			57,158							

* Exclusive of 54,136*l.* received by the North London Company for working other lines.

WALES, SCOTLAND, and IRELAND in 1893.

No. 1.—CAPITAL.

AND SHARE CAPITAL.		CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.			TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.
Preferential.	TOTAL Paid-up Stock and Share Capital.	Loans.	Debenture Stock.	TOTAL raised by Loans and Debenture Stock.		
£	£	£	£	£	£	£
200,255,866	575,211,149	11,681,701	213,787,827	225,469,528	800,680,677	32,102,887
13,313,923	*33,316,399*	—	*20,968,224*	*20,968,224*	*54,284,623*	
40,318,933	102,349,400	1,007,511	28,527,190	29,534,701	131,884,101	2,434,834
4,324,465	*20,136,926*	—	*3,315,786*	*3,315,786*	*23,452,712*	
8,166,398	27,405,754	991,459	10,361,362	11,352,821	38,758,575	285,696
64,385	*203,739*	—	*120,300*	*120,300*	*324,039*	
248,741,197	704,966,303	13,680,671	252,676,379	266,357,050	971,323,353	34,823,417
18,400,273	*53,657,064*	—	*24,404,310*	*24,404,310*	*78,061,374*	

No. 2.—TRAFFIC.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				Miscellaneous, Rents, Tolls, Navigation, Steamboats, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.
RECEIPTS FROM PASSENGERS.					Excess Luggage, Parcels, Carriages, Horses, Dogs, &c.	Mails.	TOTAL Receipts from Passenger Traffic.	Merchandise.	Live Stock.	Minerals.	TOTAL Receipts from Goods Traffic.		
1st Class.	2nd Class.	3rd Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.									
£	£	£	£	£	£	£	£	£	£	£	£	£	£
2,526,660	1,775,089	19,431,622	2,279,262	26,012,633	3,871,754	620,748	30,505,135	19,668,904	871,206	13,800,710	34,340,820	3,406,549	68,252,504
346,576	12,451	2,315,597	241,412	2,916,036	485,724	205,389	3,607,149	2,480,781	226,341	2,487,734	5,194,856	328,713	9,130,718
162,800	287,639	876,097	62,174	1,388,710	186,379	162,076	1,737,165	1,059,523	267,139	132,299	1,458,961	52,544	3,248,670
3,036,036	2,075,179	22,623,316	2,582,848	30,317,379	4,543,857	988,213	35,849,449	23,209,208	1,364,686	16,420,743	40,994,637	3,787,806	80,631,892

‡ Including 1,131,843 miles run by mixed trains.

§ Including 3,695,535 miles run by mixed trains.

No. 3.—WORKING EXPENDITURE, NET RECEIPTS, AND ROLLING STOCK.

WORKING EXPENDITURE.				TOTAL RECEIPTS, as given in the Traffic Return, No. 2.	NET RECEIPTS.	Proportion per Cent. of Expenditure to Receipts.	ROLLING STOCK on 31st December 1893.					
								CARRIAGES, WAGGONS, TRUCKS, &c.				
Legal and Parliamentary Expenses.	Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	TOTAL Working Expenditure.				Locomotives.	Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	TOTAL NUMBER of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.
£	£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
205,082	1,725,480	320,516	*39,207,291	†68,252,504	†29,045,213	57	15,372	34,793	12,590	447,977	10,996	506,356
22,044	105,208	121,306	4,712,935	9,130,718	4,417,783	52	1,926	4,546	2,084	121,225	1,283	129,138
14,711	16,564	15,210	1,774,893	3,248,670	1,473,777	55	734	1,719	1,031	15,955	456	19,161
241,837	1,847,252	457,032	*15,695,119	†80,631,892	†34,936,773	57	18,032	41,058	15,705	585,157	12,735	654,655

† Exclusive of 15,454*l.* received by the South-Eastern Company from the London, Brighton, and South Coast Company ; *see* note, page 77.

RAILWAY RETURNS.—1893.

No. 1.—CAPITAL, &c.

RETURN of the authorised SHARE and LOAN CAPITAL of the several RAILWAY COMPANIES in ENGLAND and WALES, SCOTLAND, and IRELAND, and of their PAID-UP ORDINARY, GUARANTEED, and PREFERENTIAL CAPITAL, and DEBENTURE STOCK or FUNDED DEBT, on the 31st day of December 1893, specifying the rate per cent. of the Dividends for the year 1893 on each of the said Capitals; showing also the Loans outstanding on the 31st day of December 1893, classified according to the several rates per cent. of Interest; and the Capital subscribed to other undertakings, whether such undertakings are on lease to, or worked by, the subscribing Company, or are independent.

NOTE.—The figures in *italics* in the following pages from 2 to 45 show the amounts by which the Capitals of the Railway Companies have been nominally increased on the conversion, consolidation, and division of their Stocks. In some cases the consolidation resulted in a nominal decrease, and the amounts by which the Capitals were so decreased are specially noted. The amounts of Capital printed in Roman type include the nominal additions and show the sums receiving the rates of dividend stated against them.

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No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Abbotsbury	*Worked by the Great Western.*							
Aberdare	*Leased to the Taff Vale.*							
Abingdon	*Leased to the Great Western.*							
Alexandra (Newport and South Wales) Docks and Railway.	1,410,000	445,000	1,855,000	346,379	Nil	—	—	—
				—	—	—	—	—
Baker Street and Waterloo	1,250,000	416,000	1,666,000	—	—	—	—	—
Bala and Festiniog	*Worked by the Great Western.*							
Banbury and Cheltenham Direct	*Worked by the Great Western.*							
Barnoldswick	*Worked by the Midland.*							
Barry	2,570,000	840,000	3,410,000	981,240	9½	—	—	—
Bexley Heath	226,000	75,200	301,200	66,740	Nil	150,000	3	Nil
Birkenhead (vested jointly in the Great Western and London and North-Western).	2,550,000	—*	2,550,000	1,941,506 134,316†	4 Nil	—	—	—
Birmingham and Henley-in-Arden	30,000	10,000	40,000	29,011	Nil	—	—	—
Bishop's Castle	472,000	157,000	629,000	133,259	Nil	—	—	—
Blackpool	510,000	170,000	680,000	—	—	—	—	—
Brading Harbour Improvement and Railway	*Worked by the Isle of Wight.*							
Brean Down Harbour and Railway	348,000	116,000	464,000	—	—	—	—	—
Brecon and Merthyr Tydfil Junction	1,222,500	907,300	2,129,800	264,360	Nil	—	—	—
				—	—	—	—	—
Bridgwater	135,000	45,000	180,000	75,000	1¼	—	—	—
Bridport	*Leased to the Great Western.*							
Brighton and Dyke	*Worked by the London, Brighton, and South Coast.*							
Brighton and Rottingdean Seashore Electric	20,000	5,000	25,000	4,396	Nil	—	—	—
Brighton, Rottingdean, and Newhaven Direct	210,000	70,000	280,000	—	—	—	—	—
Buckfastleigh, Totnes, and South Devon	*Worked by the Great Western.*							
Buckley	*Worked by the Wrexham, Mold, and Connah's Quay.*							
Burry Port and Gwendreath Valley	59,650	90,350	150,000	13,540	Nil	—	—	—
				121,860†	—	—	—	—

31st December 1893.—ENGLAND AND WALES.

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

Share Capital.				Capital raised by Loans and Debenture Stock.					Total Capital paid up and raised by Loans and Debenture Stock.	Subscriptions to other Companies.	Remarks.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
515,000 365,000	4½ 4½	4½ 4½	1,226,379	—	—	395,000	4	395,000	1,621,379	—	In addition to paying interest on capital the Company paid 5,521*l.* for Royalties.
192,205	*4½*	*4½*	*192,205*	—	—	—	—	—	*192,205*	—	
—	—	—	—	—	—	—	—	—	—	—	
88,734 598,760 210,000 150,000	4 5 5 5	4 5 5 5	2,028,734	17,825*	4	80,000 532,175	3½ 4	630,000	2,658,734	—	* Capitalized value of Rentcharges.
—	—	—	216,740	—	—	12,387	3	12,387	229,127	—	
474,178	4½	4½	2,550,000	—	—	—	—	—	2,550,000	—	* Borrowing powers assumed in equal proportions by the Companies in which the line is vested. † Calls received on forfeited shares, in respect of which no dividend is paid.
	—	—	29,011	—	—	—	—	—	29,011	—	Line in course of construction.
86,750	5	Nil	220,009	60,000 28,000 1,700	5 5 6	—	—	89,700	309,709	—	
	—	—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	
46,500* 806,850	5 5	5 Nil	1,117,710	14,075†	5	833,908	4	847,983	1,965,693	—	* Rumney preference shares. † Capitalized value of Land Rentcharges. ‡ Nominal decrease.
—	—	—	—	—	—	*46,118‡*	—	*46,118‡*	*46,118‡*	—	
60,000	4½	4½	135,000	—	—	45,000	4	45,000	180,000	—	The line is worked by the Joint Committee of the "London and South-Western" and "Midland" Companies for working the Somerset and Dorset line.
—	—	—	4,396	—	—	—	—	—	4,396	—	
—	—	—	—	—	—	—	—	—	—	—	
33,080	5	Nil	46,620	4,500 10,000 16,500 4,045*	4 5 6 5	40,168	4	75,213	121,833	—	* Capitalized value of Land Rentcharges.
16,740†	—	—	*138,600†*	—	—	—	—	—	*138,600†*	-	† Nominal decrease of capital.

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Cambrian	2,664,757	2,345,956*	5,010,713*	949,858	Nil	—	—	—
				—	—	—	—	—
Worked by the Cambrian.—Mid Wales	812,600	315,706	1,128,306	404,040	Nil	—	—	—
Cannock Chase and Wolverhampton	80,000	26,600	106,600	70,500	Nil	—	—	—
Central London	2,850,000	950,000	3,800,000	400	Nil	—	—	—
Charing Cross, Euston and Hampstead	1,416,000	472,000	1,888,000	—	—	—	—	—
Charnwood Forest	*Worked by the London and North-Western.*							
Cheadle Railway, Mineral, and Land Co., Limited.	*See* Note, p. iii.							
Cheltenham Station	20,000	—	20,000	18,250	5	—	—	—
Cheshire Lines Committee (Consisting of the "Great Northern," "Manchester, Sheffield, and Lincolnshire," and "Midland" Railway Companies.) Incorporated by The Cheshire Lines Act, 1867.	—*	—*	—*	—	—	—	—	—
Southport and Cheshire Lines Extension	385,000	200,000	585,000	288,000	Nil	—	—	—
				15,000	*Nil*	—	—	—
Chipstead Valley	175,000	58,000	233,000	—	—	—	—	—
City and South London	1,550,000	475,000	2,025,000	630,000	$\frac{11}{16}$	—	—	—
Cleator and Workington Junction	517,200	172,400	689,600	216,010	1	—	—	—
Cleveland Extension Mineral	220,000	72,600	292,600	68,678	Nil	—	—	—
Cockermouth, Keswick, and Penrith	284,000	93,000	377,000	259,000	$4\frac{3}{4}$	—	—	—
Colchester, Stour Valley, Sudbury, and Halstead.	*Leased to the Great Eastern.*							
Collingbourne and Avon Valley	24,000	8,000	32,000	—	—	—	—	—
Colne Valley and Halstead	86,790	431,435	518,225	61,200	Nil	—	—	—
Cornwall Minerals	*Worked by the Great Western.*							
Corris	15,000	5,000	20,000	15,000	$6\frac{1}{2}$	—	—	—
Corwen and Bala	*Leased to the Great Western.*							
Cowbridge and Aberthaw	*Worked by the Taff Vale.*							
Cranbrook and Paddock Wood (Light)	*Worked by the South-Eastern.*							
Crowland	30,000	10,000	40,000	2,354	Nil	—	—	—
Croydon and Oxted Joint Committee	Line owned jointly by the "London, Brighton, and South Coast" and "South-Eastern"							
Devon and Somerset	*Worked by the Great Western.*							
Didcot, Newbury, and Southampton	1,080,760	315,920	1,396,680	307,034	Nil	—	—	—
Dover and Deal Committee	The line is the joint property of the "London, Chatham, and Dover" and "South-							
Dowlais	—	—	—	—	—	—	—	—
Dowlais Extension	—	—	—	—	—	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
1,555,617	4	Nil	2,505,475	49,928†	4	2,221,120	4	2,271,048	4,776,523	—	*Exclusive of 65,644*l.* authorised to be raised by Board of Trade Certificates. † Capitalized value of Land Rentcharges.
129,757	*4*	*Nil*	*129,757*	—	–	*151,449*	*4*	*151,449*	*281,206*	—	
200,000	5	Nil	806,640	—	–	32,267	4	315,706	1,122,346	—	
90,000	5	Nil				283,439	4½				
112,600	5	Nil									
—	–	–	70,500	20,100	6	—	–	20,100	90,600	—	
—	–	–	400	—	–	—	–	—	400	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	18,250	—	–	—	–	—	18,250	—	The station is used by the "Midland" and the "Midland and South-Western Junction" Railway Companies.
—	–	–	—*	—	–	—	–	—	—*	—	* The Capital is provided by the three Companies owning the line in equal proportions, and is included in their returns.
75,000	2½	1 7/10	363,000	—	–	198,400	3	198,400	561,400	—	
—	–	–	*15,000*	—	–	—	–	—	*15,000*	—	
—	–	–	—	—	–	—	–	—	—	—	
70,400	5	5	700,400	95,300	5	97,130	4	192,430	892,830	—	
167,700	4	4	453,710	67,845	3½	—	–	138,400	592,110	—	
70,000	4½	4½		6,500	3 5/8						
				64,055	4						
—	–	–	68,678	—	–	—	–	—	68,678	—	
25,000	5	5	284,000	—	–	90,132	4	90,132	374,132	—	
—	–	–	—	—	–	—	–	—	—	—	
25,590	5	Nil	86,790	1,920*	5	55,200	5	424,485	511,275	—	* Capitalized value of Land Rentcharges.
						367,365	Nil				
—	–	–	15,000	—	–	4,950	5	4,950	19,950	—	
—	–	–	2,354	—	–	—	–	—	2,354	—	
Railway Companies; the Capital is included in the Returns of those Companies.											
638,819	5	Nil	945,853	87,370	4	166,000	5	294,880	1,240,733	—	Line worked by the "Great Western" and the "London and South-Western" Companies.
				30,630	5						
				10,880	6						
Eastern" Railway Companies; the Capital is included in the Returns of those Companies.											
—	–	–	—	—	–	—	–	—	—	—	The Railway is the property of the Dowlais Iron Company. There is no separate Capital for the Railway.
—	–	–	—	—	–	—	–	—	—	—	

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Downham and Stoke Ferry	*Leased to the Great Eastern.*							
Easingwold	13,500	4,500	18,000	11,772	Nil	—	—	—
East and West Junction	300,000	698,688	998,688	300,000	Nil	—	—	—
Evesham, Redditch, and Stratford-upon-Avon Junction.	90,000	50,000	140,000	45,000	Nil	—	—	—
Stratford-upon-Avon, Towcester, and Midland Junction.	193,450	200,000	393,450	160,000	5	—	—	—
East and West Yorkshire Union	150,000	50,000	200,000	79,329	2	—	—	—
East Cornwall Mineral (Calstock to Callington.)	The line is stated to have been sold to the Plymouth, Devonport, and South-Western							
Eastern and Midlands: Lynn, Yarmouth, and Norwich Section	Sold to the "Great Northern" and "Midland" Companies jointly under Act 56 Vict.							
East Lincolnshire	*Leased to the Great Northern.*							
East London	3,245,000	2,579,000	5,824,000	3,240,799	Nil	—	—	—
				840,599	*Nil*	—	—	—
Easton and Church Hope	120,000	39,900	159,900	29,727	Nil	—	—	—
Ely and Newmarket	*Leased to the Great Eastern.*							
Ely and St. Ives	*Worked by the Great Eastern.*							
Ely Valley	*Worked by the Great Western.*							
Epsom Downs Extension	75,000	24,500	99,500	13,000	Nil	—	—	—
Evesham, Redditch, and Stratford-upon-Avon Junction.	*Worked by the East and West Junction and Stratford-upon-Avon, Towcester, and Midland*							
Exeter, Teign Valley, and Chagford	240,000	80,000	320,000	—	—	—	—	—
Exmouth Docks and Railway	60,000	40,000	100,000	30,000* 30,000†	Nil Nil	—	—	—
Felixstowe Dock and Railway	150,000	50,000	200,000	130,000	Nil	—	—	—
Festiniog*	176,186	44,000	220,186	86,186	4	—	—	—
Filey Pier and Tramroad	45,000	15,000	60,000	—	—	—	—	—
Fishguard Bay Railway and Pier	120,000	40,000	160,000	—	—	—	—	—
Forcett	34,200	11,400	45,600	34,200	3⅝	—	—	—
Forest of Dean Central	*Worked by the Great Western.*							
Freshwater, Yarmouth, and Newport	*Worked by the Isle of Wight Central.*							
Furness	5,271,875	1,636,566	6,908,441	2,642,000	1¼	779,125	4	4
				—	—	*264,625*	*4*	*4*
Garstang and Knot End	90,000	30,000	120,000	60,000	Nil	—	—	—
Glyn Valley Tramway	55,000	18,300	73,300	24,295	Nil	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	11,772	4,000	4	—	–	4,000	15,772	—	
—	–	–	300,000	—	–	399,901 268,787	5 6	668,688	968,688	—	The lines of the Companies are worked by a joint committee of the "East and West Junction" and Stratford-upon-Avon, Towcester, and Midland Junction" Companies.
45,000	5	Nil	90,000	30,000	5	10,900	4	40,900	130,900	—	
15,350	5	Nil	175,350	—	–	199,005	5	199,005	374,355	160,000	
—	–	–	79,329	25,000 7,650*	4½ 5	—	–	32,650	111,979	—	* Capitalized value of Land Rentcharges.
Junction, under Act 54 & 55 Vict. c. 113.											
c. 57. *See* "Midland and Great Northern Joint Committee" (Eastern Section).											
—	–	–	3,240,799	—	–	250,000 172,920 2,126,546	2½ 3⅛ 4	2,549,466	5,790,265	—	
—	–	–	*840,599*	—	–	*125,000* *407,101*	2½ *4*	*532,101*	*1,372,700*	—	
33,920	5	Nil	63,647	—	–	10,000	4½	10,000	73,647	—	By an Act obtained in 1892, the Company is authorized to re-arrange its capital as under: Ordinary shares - £30,000 5 per cent. Preference Shares - - 59,900 4½ per cent. Debenture Stock - - - 70,000 Total - 159,900
—	–	–	13,000	—	–	—	–	—	13,000	—	
Junction Railway Companies' Joint Committee.											
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	60,000	15,000	5	—	–	15,000	75,000	—	* Preferred Stock. † Deferred Stock.
—	–	–	130,000	—	–	—	–	—	130,000	—	
10,000 40,000	4½ 5	4½ 5	136,186	—	–	2,000 12,000	4 4¼	14,000	150,186	—	* In addition to paying interest on Capital, the Company paid 1,273*l.* for rents and tonnages.
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	34,200	2,930 920 2,325*	4 4½ 5	—	–	6,175	40,375	—	* Capitalized value of Land Rentcharges.
1,840,086	4	4	5,261,211	—	–	1,569,457	4	1,569,457	6,830,668	—	
213,750	*4*	*4*	*478,375*	—	–	—	–	—	*478,375*	—	
19,410	5	Nil	79,410	16,100 250*	5 4	—	–	16,350	95,760	—	* Capitalized value of Land Rentcharges.
26,377	5	*—	50,672	13,300	4½	—	–	13,300	63,972	—	* Out of the net receipts, 1,073*l.* were applied in paying back dividends on the preference stock.

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Golden Valley	177,000	159,000	336,000	106,723	Nil	—	—	—
Monmouth Extension (separate undertaking).	189,000	63,000	252,000	—	—	29,800	5	Nil
Corsedda Junction and Portmadoc	30,000	10,000	40,000	19,995	Nil	—	—	—
Great Eastern	32,968,579	15,239,147	48,207,726	12,572,850	1	5,444,627	4	4
						650,000	5	5
				—	—	*1,035,236*	*4*	*4*
Leased to or worked by the Great Eastern. Colchester, Stour Valley, Sudbury, and Halstead.	250,000	83,000	333,000	228,675	3 3/10	—	—	—
Downham and Stoke Ferry	60,000	20,000	80,000	47,249	4	—	—	—
Ely and Newmarket	100,000	33,333	133,333	100,000	5	—	—	—
Ely and St. Ives	98,000	32,000	130,000	37,706	4	—	—	—
				60,000	5			
London and Blackwall	2,587,180	857,000	3,444,180	2,230,865	4½	—	—	—
Mellis and Eye	15,000	5,000	20,000	15,000	5	—	—	—
Northern and Eastern	1,179,250	307,800	1,487,050	847,800	5	63,000	5	5
				263,700	6	4,750	6	6
Ramsey and Somersham Junction	50,000	16,666	66,666	50,000	Nil	—	—	—
Thetford and Watton	79,000	26,300	105,300	45,000	Nil	—	—	—
Watton and Swaffham *See also* "Tottenham and Hampstead Junction."	105,000	35,000	140,000	60,000	Nil	—	—	—
Great Marlow	18,000	6,000	24,000	8,280	5½	—	—	—
Great Northern	36,796,461	13,678,440	50,474,901	9,738,387	4	—	—	—
				1,159,275	6			
				6,492,255	Nil			
				1,159,275	Nil			
				3,246,124	*4*	—	—	—
Leased to or worked by the Great Northern. East Lincolnshire	600,000	—*	600,000	600,000	6	—	—	—
Horncastle	48,000	15,620	63,620	48,000	7 5/8	—	—	—
Louth and East Coast	144,000	94,000	238,000	95,975	Nil	—	—	—
Nottingham and Grantham Railway and Canal.	1,014,000	265,000	1,279,000	1,014,000	4 1/20	—	—	—
Nottingham Suburban	250,000	83,300	333,300	250,000	3½	—	—	—
Royston and Hitchin	346,667	115,466	462,133	266,675	5 13/15	—	—	—
Stamford and Essendine	140,000	46,000	186,000	46,500	2	—	—	—
				75,000	Nil			
Sutton and Willoughby	84,000	28,000	112,000	82,582	Nil	—	—	—
Wainfleet and Firsby	18,000	6,000	24,000	18,000	8½	—	—	—
Extension to Skegness *See also* the "Cheshire Lines Committee," and "Midland and Great Northern Railways Joint Committee."	27,000	9,000	36,000	27,000	8½	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent	£	£	£	
69,000	5	Nil	175,723	—	–	159,000	5	159,000	334,723	—	
—	–	–	29,800	—	–	—	–	—	29,800	—	
2,100	5	Nil	22,095	800 5,800	6 8	—	–	6,600	28,695	—	
457,426 1,365,000 9,613,800 2,249,870	2½ 3½ 4 4½	2½ 3½ 4 4½	32,353,573	82,850 390,500 178,200	3¼ 4 5	13,721,792 6,640 10,426 231,516	4 4¼ 4½ 5	14,621,924	46,975,497	232,830	
632,522	*4*	*4*	*1,667,758*	—	–	*886,582*	*4*	*886,582*	*2,554,340*	—	
30,230	5	5	258,905	—	–	—	–	—	258,905	—	
—	–	–	47,249	19,200 671	3½ 5	—	–	19,871	67,120	—	
—	–	–	100,000	—	–	33,333	3½	33,333	133,333	—	
—	–	–	97,706	5,000 15,000	3¼ 3½	12,000	5	32,000	129,706	—	
250,055	4½	4½	2,480,920	—	–	794,300	4¼	794,300	3,275,220	—	
—	–	–	15,000	—	–	—	–	—	15,000	—	
—	–	–	1,179,250	—	–	—	–	—	1,179,250	—	
—	–	–	50,000	—	–	16,666	4	16,666	66,666	—	
34,000	5	4¼	79,000	—	–	26,300	4	26,300	105,300	—	
—	–	–	60,000	20,000	4	—	–	20,000	80,000	—	
9,720	5	5½	18,000	—	–	3,000 3,000	3½ 4	6,000	24,000	—	
3,044,490 12,819,520 575,000	4 4 6	4 4 6	34,988,262	—	–	12,797,250	3	12,797,250	47,785,452	*6,729,640	*Subscriptions to joint lines 6,429,640*l.*, and to other companies 300,000*l.*
471,327 *1,382,505*	*4* *4*	*4* *4*	*5,049,956*	—	–	*3,044,115*	*3*	*3,044,115*	*8,094,071*	—	
—	–	–	600,000	—	–	—	–	—	600,000	—	* Borrowing powers (200,000*l.*) exercised by the Great Northern Railway Company.
—	–	–	48,000	14,000 1,620*	4 4	—	–	15,620	63,620	—	* Capitalized value of Land Rentcharges.
—	–	–	95,975	—	–	43,000 29,071*	4 2¼	72,071	168,046	—	* Interest (not exceeding 5 per cent. per annum) is payable on this stock out of the revenue of the year.
—	–	–	1,014,000	—	–	—	–	—	1,014,000	—	
—	–	–	250,000	—	–	—	–	—	250,000	—	
—	–	–	266,675	—	–	—	–	—	266,675	—	
15,000 3,500	4 5	4 5	140,000	—	–	16,000	4	16,000	156,000	—	
—	–	–	82,582	28,000	4½	—	–	28,000	110,582	—	
—	–	–	18,000	5,000 1,000	3½ 4	—	–	6,000	24,000	—	
—	–	–	27,000	6,500 2,500 4,112* 611*	3½ 4 4 4½	—	–	13,723	40,723	–	Capitalized value of Land Rentcharges.

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Great Northern and City	1,500,000	500,000	2,000,000	—	—	—	—	—
Great North of England, Clarence, and Hartlepool Junction.	*Leased to the North-Eastern.*							
Great Western	61,814,106	21,312,165	83,126,271*	22,357,670	4¾	24,960,848	5	5
				442,735‡	—	*726,094‡*	—	—
Leased to or worked by the Great Western.								
Abbotsbury	64,000	21,300	85,300	51,440	Nil	—	—	—
Abingdon	20,000	5,000	25,000	15,000	8	—	—	—
Bala and Festiniog	288,000	95,900	383,900	238,000	1⅜	—	—	—
Banbury and Cheltenham Direct	700,000	1,060,000	1,760,000	600,000	Nil		—	—
Bridport	127,000	35,600	162,600	64,431	1	—	—	—
Buckfastleigh, Totnes, and South Devon.	86,000	82,000	168,000	65,974	Nil	—	—	—
Cornwall Minerals	1,224,000	519,900	1,743,900	492,566	Nil	—	—	—
				63,266	*Nil*	—	—	—
Corwen and Bala	144,000	40,000	184,000	120,000	2 1/16	—	—	—
Devon and Somerset	272,700	1,163,000	1,435,700	259,582	Nil	—	—	—
				—	—	—	—	—
Ely Valley	83,000	27,300	110,300	48,000 35,000*	5½ Nil	—	—	—
Forest of Dean Central	*See* note, page iii.							
Helston	82,000	27,333	109,333	26,000	Nil	—	—	—
Kington and Eardisley	160,000	130,000	290,000	69,230	Nil	—	—	—
Leominster and Kington	122,000	39,660	161,660	59,010 42,000	4 4½	—	—	—
Llangollen and Corwen	110,000	30,000	140,000	90,000	2⅞	—	—	—
Marlborough	51,000	15,000	66,000	30,830	4¾	—	—	—
Milford	70,000	23,000	93,000	58,430	1 7/16	—	—	—
Minehead	60,000	—	60,000	15,000	1 13/80	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	—	—	–	—	–	—	—	—	
11,565,905	5	5	58,884,423	400 1,200 450 300 29,763† 83,287†	3 4 4¼ 4½ 4½ 5	9,820,006 918,966 4,497,867 2,884,045	4 4¼ 4½ 5	18,236,284	77,120,707	798,820	*This does not include some permissive powers, which as yet have not been exercised, in relation to the borrowing powers of other Companies, and to the creation of Capital for the acquisition of, or the subscribing towards, the undertakings of other Companies; nor does it include Capital authorised to be raised jointly with other Companies. † Capitalized value of Rentcharges. ‡ Nominal reduction of Capital.
426,737	*5*	*5*	*742,092‡*	—	–	—	–	—	*742,092‡*	—	
10,000	5	Nil	61,440	21,300	5	—	–	21,300	82,740	—	
450 600	4 5	4 5	16,050	5,000	3½	—	–	5,000	21,050	—	
50,000	5	5	288,000	—	–	94,850	4	94,850	382,850	—	
96,143	5	Nil	696,143	9,344*	5	590,656 455,434	4 5	1,055,434	1,751,577	—	*Capitalized value of Land Rentcharges.
23,000 4,000 20,000	4 5 6	4 5 6	111,431	23,100 990*	3½ 5	—	–	24,090	135,521	—	*Capitalized value of Land Rentcharges.
20,000	5	3¼	85,974	—	–	78,301	4	78,301	164,275	—	
596,650	4	Nil	1,089,216	7,500	5	147,000 314,220 21,900	3¼ 4 5	490,620	1,579,836	—	
80,493	*4*	*Nil*	*143,759*	—	–	*108,120*	–	*108,120*	*251,879*	—	
24,000	4	4	144,000	—	–	38,262	4¼	38,262	182,262	24,000	
12,000	5	Nil	271,582	—	–	433,000 428,957 250,818	3 4 4	1,112,775	1,384,357	—	
—	–	–	—	—	–	*428,957* *82,939*	*4* *4*	*511,896*	*511,896*	—	
—	–	–	83,000	—	–	6,000 15,000	4 4½	21,000	104,000	—	*Amount held by the Great Western Railway Company on which no dividend is paid.
56,000	3½	1 13 11/480	82,000	—	–	27,333	5	27,333	109,333	—	
64,941	4	Nil	134,171	—	–	129,288	4	129,288	263,459	—	
20,990	4½	4½	122,000	15,100 23,900	3½ 4	—	–	39,000	161,000	—	
20,000	4	4	110,000	—	–	29,820	4¼	29,820	139,820	20,000	
4,800	6	6	35,630	2,100*	5	12,865	3½	14,965	50,595	—	*Capitalized value of Land Rentcharges.
—	–	–	58,430	1,600	4	12,600	4	14,200	72,630	—	
45,000	4½	4½	60,000	—	–	—	–	—	60,000	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
Great Western—*cont.*	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Leased to or worked by the Great Western—*cont.*								
Much Wenlock and Severn Junction	68,000	16,000	84,000	32,750	Nil	—	—	—
Nantwich and Market Drayton	120,000	40,000	160,000	120,000	4½	—	—	—
Oldbury	70,000	30,500	100,500	70,000	3⅝	—	—	—
Princetown	60,000	20,000	80,000	59,960	Nil	—	—	—
Ross and Monmouth	160,000	53,000	213,000	80,000	1⅝	—	—	—
Staines and West Drayton	120,000	40,000	160,000	85,000	Nil	—	—	—
Teign Valley	132,740	78,300	211,040	15,510	Nil	—	—	—
Tiverton and North Devon	65,000	21,166	86,166	64,500	Nil	—	—	—
Vale of Llangollen	86,000	23,000	109,000	44,700	6½	—	—	—
Wenlock	125,000	41,500	166,500	60,000 40,000*	3½ —	—	—	—
West Cornwall Railway—"Great Western" Railway Company in respect of the.	945,493	—	945,493	—	—	809,493 85,500	4½ 5	4½ 5
West Somerset	154,000	43,330	197,330	67,796	2¾	—	—	—
Wye Valley *See also* "Birkenhead," "Halesowen," "Hammersmith and City," "Shrewsbury and Hereford," "Tenbury," "Victoria Station and Pimlico," "West London," and "Weymouth and Portland."	335,000	111,400	446,400	230,000	Nil	—	—	—
Guiseley, Yeadon, and Headingley	40,000	13,330	53,330	14,588	Nil	—	—	—
Gwendraeth Valleys	170,000	56,000	226,000	100,000	Nil	—	—	—
Halesowen	186,000	62,000	248,000	120,000	Nil	—	—	—
Halifax and Ovenden	The line is the joint property of the "Great Northern" and "Lancashire and Yorkshire"							
Halifax High Level	291,500	97,166	388,666	241,500	2⅞	—	—	—
Hammersmith and City Great Western and Metropolitan Railway Companies jointly in respect of the.	340,000	33,000	373,000	—	—	154,000 180,000	5 5½	5 5½
Harborne	*Worked by the London and North-Western.*							

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

Share Capital.				Capital raised by Loans and Debenture Stock.					Total Capital paid up and raised by Loans and Debenture Stock.	Subscriptions to other Companies.	Remarks.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
15,000 20,000	5 4½	5 4½	67,750	11,000	4½	—	—	11,000	78,750	20,000	
—	—	—	120,000	6,700 18,120	3½ 4	—	—	24,820	144,820	—	
—	—	—	70,000	—	—	30,500	4	30,500	100,500	—	
—	—	—	59,960	19,900 100*	4½ 5	—	—	20,000	79,960	—	* Capitalized value of Land Rentcharges.
80,000	6	6	160,000	47,300 5,434*	3½ 5	—	—	52,734	212,734	—	* Capitalized value of Rentcharges.
35,000	4	Nil	120,000	—	—	40,000	4½	40,000	160,000	—	
72,000	5	Nil	87,510	—	—	64,250	4	64,250	151,760	—	
—	—	—	64,500	21,166	3½	—	—	21,166	85,666	—	
12,000 26,500	4 5	4 5	83,200	—	—	22,447	4¼	22,447	105,647	12,000	
25,000	5	5	125,000	3,400 6,471†	4 4	31,600	3½	41,471	166,471	—	* Amount subscribed by the "Great Western" and "Much Wenlock and Severn Junction" Companies in equal proportions, for the construction of the Coalbrookdale Extension Branch. The "Great Western" pay the "Much Wenlock and Severn Junction" Company a fixed sum in lieu of dividend on the moiety subscribed by it, and retain the balance of the profits of the working of the extension in lieu of dividend on their moiety. † Capitalized value of Land Rentcharges.
—	—	—	894,993	—	—	—	—	—	894,993	—	
75,063	4	4	142,859	—	—	40,000	4	40,000	182,859	—	
69,650	5	Nil	299,650	—	—	76,600	5	76,600	376,250	—	
—	—	—	14,588	8,330	3½	—	—	8,330	22,918	—	The Leeds and Yeadon line was abandoned under Act 56 Vict. ch. 24.
—	—	—	100,000	33,300	5	—	—	33,300	133,300	—	
66,000	5	Nil	186,000	—	—	62,000	5	62,000	248,000	—	The line is worked by the "Great Western" and "Midland" Companies. The traffic receipts and working expenses, &c. are included in the Returns of those Companies.
Railway Companies; the Capital is included in the Returns of those Companies.											
28,500	3¼	3¼	270,000	53,330	3¼	—	—	53,330	323,330	—	The railway is worked by the "Great Northern" and "Lancashire and Yorkshire" Railway Companies jointly.
—	—	—	334,000	—	—	—	—	—	334,000	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Harrow and Stanmore	*Worked by the London and North-Western.*							
Hayling Railways	*Leased to the London, Brighton, and South Coast.*							
Helston	*Worked by the Great Western.*							
Horncastle	*Worked by the Great Northern.*							
Hounslow and Metropolitan	*Worked by the Metropolitan District.*							
Hull and North-Western Junction	540,000	180,000	720,000	—	—	—	—	—
Hull, Barnsley, and West Riding Junction Railway and Dock.	4,500,000	4,118,947	8,618,947	3,285,013	Nil	—	—	—
Hunslet	360,000	120,000	480,000	—	—	—	—	—
Isle of Wight	402,312	201,811	604,123	154,000*	4	—	—	—
				154,000†	3			
				154,000	*3*	—	—	—
Brading Harbour Improvement and Railway.	40,000	13,300	53,300	40,000	Nil	—	—	—
Isle of Wight Central	282,000	304,355	586,355	80,460	Nil	—	—	—
Freshwater, Yarmouth, and Newport	142,000	*47,300	*189,300	92,081	Nil	—	—	—
Kettering, Thrapstone, and Huntingdon	*Worked by the Midland.*							
King's Lynn Docks and Railway	415,250	150,000	565,250	60,108	1	—	—	—
				82,281	Nil			
				—	—	—	—	—
Kington and Eardisley	*Worked by the Great Western.*							
Lambourn Valley	130,000	43,000	173,000	49,762	Nil	—	—	—
Lancashire and Yorkshire	38,215,546	13,765,483	51,981,029	16,740,995	3⅛	2,595,989	4	4
				—	—	*634,151*	*4*	*4*
Lancashire, Derbyshire, and East Coast	6,000,000	1,999,960	7,999,960	762,717	—*	—	—	—
Latimer Road and Acton	180,000	60,000	240,000	52,793	Nil	—	—	—
Lee-on-the-Solent	30,000	10,000	40,000	24,168	Nil	—	—	—
Leominster and Kington	*Worked by the Great Western.*							
Liskeard and Caradon	211,625	75,300	286,925	23,625	Nil	—	—	—
Liskeard and Looe Union Railway and Canal.	26,000	14,000	40,000	25,300	Nil	—	—	—
Liskeard and Looe Union Railway and Canal	*Worked by the Liskeard and Caradon.*							
Liverpool Overhead Railway	570,000	190,000	760,000	375,000	½	—	—	—
Liverpool, St. Helens, and South Lancashire	550,000	183,000	733,000	81,286	Nil	100,000	3½	Nil
Liverpool, Southport, and Preston Junction	*Worked by the West Lancashire.*							
Llanelly and Mynydd Mawr	60,000	45,000	105,000	59,616	Nil	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

Share Capital.				Capital raised by Loans and Debenture Stock.					Total Capital paid up and raised by Loans and Debenture Stock.	Subscriptions to other Companies.	Remarks.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	3,285,013	40,000*	5	3,548,266	3	3,588,266	6,873,279	—	* Capitalized value of Rentcharges.
—	–	–	—	—	–	—	–	—	—	—	
84,012	4	4	392,012	6,056‡	5	188,000	4	194,056	586,068	—	* Preferred Converted Ordinary Stock.
16,802	*4*	*4*	*170,802*	—	–	*37,000*	*4*	*37,000*	*207,802*	—	† Deferred Converted Ordinary Stock.
—	–	–	40,000	13,300	5	—	–	13,300	53,300	—	‡ Capitalized value of Land Rentcharges.
193,055	5	Nil	273,515	7,964*	5	109,355	3	312,319	585,834	—	* Capitalized value of Rentcharges.
						125,000	4				
						70,000	4½				
42,000	5	Nil	134,081	3,730	5	47,300	5	70,230	204,311	—	* The Company is also authorised to issue an amount of Debenture Stock sufficient to produce 20,000*l.*
						19,200	5				
14,250	4	4	311,639	4,200	4	—	–	88,320	399,959	—	
135,000	4	4		54,600	4¼						
20,000	5	5		24,460	4½						
				5,060	5						
4,750	*4*	*4*	*49,750*	—	–	—	–	—	*49,750*	—	
30,000	*4*	*4*									
15,000	*4*	*4*									
—	–	–	49,762	—	–	—	–	—	49,762	—	
900,000	3½	3½	36,128,546	340,230	3	50,000	1½	12,532,985	48,661,531	—	* Minimum rate.
1,500,000	3½	3½*		1,800	3¼	50,000	3½				
14,003,187	4	4		11,450	3½	12,079,067	4				
100,000	4½*	4½		438	4						
288,375	6*	6									
1,466,437	*4*	*4*	*2,100,588*	—	–	—	–	—	*2,100,588*	—	
—	–	–	762,717	—	–	—	–	—	762,717	—	* Interest at the rate of 3 per cent. per annum has been paid on a capital sum of 553,143*l.* The interest accrued from the date of the Board of Trade certificate (10th July 1893), on instalments paid up prior to that date, and from the date of payment on instalments subsequently paid up. The same rate of interest was also allowed under 8 Vict. C. 16. s. 24, on sums paid in advance of calls prior to the date of the Board of Trade certificate.
—	–	–	52,793	—	–	—	–	—	52,793	—	
—	–	–	24,168	—	–	—	–	—	24,168	—	
7,200	5	Nil	30,825	2,000	4	—	–	14,000	44,825	—	
				10,500	4½						
				1,500	5						
—	–	–	25,300	6,150	4	—	–	13,050	38,350	650	
				6,600	4½						
				300	5						
70,940	5	5	445,940	125,000	4	—	–	125,000	570,940	—	Line opened for traffic on 6th March 1893.
40,000	4	Nil	221,286	—	–	—	–	—	221,286	—	
—	–	–	59,616	—	–	44,072	5	44,072	103,688	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL. By Shares and Stock.	By Loans and Debenture Stock.	Total.	PAID-UP STOCK AND Ordinary. Amount.	Ordinary. Rate of Dividend paid.	Guaranteed. Amount.	Guaranteed. Guaranteed Rate of Dividend.	Guaranteed. Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Llangollen and Corwen	*Leased to the Great Western.*							
London and Blackwall	*Leased to the Great Eastern.*							
London and Greenwich	*Leased to the South-Eastern.*							
London and North-Western	82,023,233	39,919,320	121,942,553	39,950,705	5⅜	15,100,406	4	4
				1,933,542	5⅜	*3,324,286*	*4*	*4*
Leased to or worked by the London and North-Western. Charnwood Forest	159,000	53,000	212,000	159,000	Nil	—	—	—
Harborne	100,000	83,000	183,000	55,990	Nil	—	—	—
Harrow and Stanmore	36,000	12,000	48,000	36,000	Nil	—	—	—
Mold and Denbigh Junction	325,000	247,000	572,000	73,000 76,000* 76,000†	Nil Nil Nil	—	—	—
Shropshire Union Railways and Canal *See also* "Birkenhead," "Manchester, South Junction, and Altrincham," "North and South-Western Junction," "Oldham, Ashton-under-Lyne, and Guide Bridge Junction," "Shrewsbury and Hereford," "Tenbury," and "West London."	422,443	—	422,443	422,443	2 1/16	—	—	—
London and South-Western	26,760,462	10,843,821	37,604,283	10,432,065 1,241,440 1,241,440	6 4 2	797,980	4	4
				1,241,440	*2*	*145,632*	*4*	*4*
Leased to or worked by the London and South-Western. North Cornwall	173,000	58,000	231,000	—	—	—	—	—
Launceston and Halwill capital	150,000	50,000	200,000	150,000	1¾	—	—	—
Launceston and Delabole capital	187,000	62,000	249,000	147,915	3½	—	—	—
Wadebridge capital	150,000	50,000	200,000	—	—	—	—	—
Plymouth, Devonport, and South-Western Junction.	855,000	284,000	1,139,000	352,250	1⅝	—	—	—
Salisbury Railway and Market House.	17,000	4,600	21,600	13,400	5	—	—	—
Sidmouth	66,000	22,000	88,000	58,538	1½	—	—	—
Stonehouse Pool Improvement and Railway.	50,000	16,600	66,600	50,000	Nil	—	—	—
See also "West London Extension" and "Weymouth and Portland."								
London, Brighton, and South Coast	18,967,600	6,284,692	25,252,292	2,939,778 2,548,850* 2,548,850†	5⅞ 6 5¾	1,955,860	5	5
				—	—	*116,765*	*5*	*5*

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

Share Capital.				Capital raised by Loans and Debenture Stock.					Total Capital paid up and raised by Loans and Debenture Stock.	Subscriptions to other Companies.	Remarks.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
23,080,620	4	4	78,131,731	157,798*	5	37,240,247	3	37,398,045	115,529,776	4,980,365†	* Capitalized value of Rentcharges. † Including 1,721,270*l.* converted debentures of other Companies.
4,119,124	*4*	*4*	*9,376,952*	—	–	*9,284,933*	*3*	*9,284,933*	*18,661,885*	—	
—	–	–	159,000	—	–	46,000	5	46,000	205,000	—	In the Return of the Company it is stated that irregularities in the issue of debentures of this Company were discovered, and that these irregularities were the subject of litigation in the Chancery Division of the High Court of Justice. By an order of Mr. Justice Kay, a special referee was appointed to make inquiries into the over-issue and report to the Court, and this report shows that Stock to the amount of 117,902*l.* 10*s.* has been issued, but that 46,000*l.* only has been legally issued, the balance being *ultra vires*. The books of the Company show that the full issue of 53,000*l.* has been made.
—	–	–	55,990	17,262* 22,652*	4½ 5	14,586 5,880	5 5	60,380	116,370	—	* Capitalized value of Land Rentcharges.
—	–	–	36,000	12,000	4½	—	–	12,000	48,000	—	
100,000	5	Nil	325,000	12,215‡	5	40,000 137,000 70,000	5 5 5	259,215	584,215	—	* Preferred Stock. † Deferred Stock. ‡ Capitalized value of Land Rentcharges.
—	–	–	422,443	—	–	—	–	—	422,443	—	
1,335,872 10,944,826	3½ 4	3½ 4	25,993,623	700 48,660 19,225*	3½ 4 4	3,194,365 6,703,949	3 4	9,966,899	35,960,522	432,054	* Capitalized value of Land Rentcharges.
950,942	*4*	*4*	*2,338,014*	—	–	*187,347* *160,989*	*3* *4*	*348,336*	*2,686,350*	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	150,000	—	–	50,000	4	50,000	200,000	—	
—	–	–	147,915	—	–	10,000	3½	10,000	157,915	—	
—	–	–	—	—	–	—	–	—	—	—	
300,000	4½	4½	652,250	—	–	220,000	4	220,000	872,250	—	
1,000	6	6	14,400	3,600	4	—	–	3,600	18,000	—	
—	–	–	58,538	—	–	22,000	5	22,000	80,538	—	
—	–	–	50,000	16,600	5	—	–	16,600	66,600	—	
8,363,275‡	5	5	18,356,613	—	–	1,306,239 4,576,722	4 4½	5,882,961	24,239,574	—	* Preferred Stock. † Deferred Stock. ‡ The consolidation of the Preference Stocks of the Company resulted in a reduction of capital. The preferential capital shown is the reduced amount on which dividend is now paid. ‖ Nominal reduction of capital.
318,590‖	*5*	*5*	*201,825*‖	—	–	—	–	—	*201,825*‖	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
London, Brighton, and South Coast—*cont.*								
Leased to or worked by the London, Brighton, and South Coast. — Brighton and Dyke	72,000	34,000	106,000	22,030 *24,940 †17,925	Nil Nil Nil	—	—	—
Leased to or worked by the London, Brighton, and South Coast. — Hayling Railways	66,000	21,900	87,900	44,234	1¼	—	—	—
See also "Victoria Station and Pimlico" and "West London Extension."								
London, Chatham, and Dover	19,114,447	8,349,056	27,463,503	11,259,282	Nil	128,137	4½	4½
Leased to or worked by the London, Chatham, and Dover. — Mid-Kent (Bromley to St. Mary Cray).	70,000	23,000	93,000	61,550	4	—	—	—
Leased to or worked by the London, Chatham, and Dover. — Shortlands and Nunhead	320,000	102,310	422,310	47,080	Nil	220,000	3½	3½
See also "Victoria Station and Pimlico."								
Londonderry (Seaham to Sunderland)	*Private property.*							
London, Tilbury, and Southend	2,342,450	795,000	3,137,450	1,338,350	3¾	—	—	—
				—	—	—	—	—
Longton, Adderley Green, and Bucknall	*Worked by the North Staffordshire.*							
Louth and East Coast	*Leased to the Great Northern.*							
Ludlow and Clee Hill	Line sold to the "Great Western" and "London and North Western" under Act 55 & 56							
Lydd	*Worked by the South-Eastern.*							
Macclesfield Committee	Line owned by the "Manchester, Sheffield, and Lincolnshire" and "North Staffordshire"							
Maenclochog	*Private property.*							
Manchester and Milford	570,300	204,800	775,100	323,050	Nil	—	—	—
Manchester, Sheffield, and Lincolnshire	32,833,489	12,158,160	44,991,649	1,129,813 2,181,370* 2,181,370†	Nil Nil Nil	448,980 1,797,428 1,066,083 1,118,300 872,000	4 4¼ 4½ 5 6	4 4¼ 4½ 5 6
				—	—	*296,408* *31,083* *50,794*	4¼ 4½ 5	4¼ 4½ 5
Wigan Junction — *See also* the "Cheshire Lines Committee," "Macclesfield Committee," "Manchester, South Junction, and Altrincham," "Oldham, Ashton-under-Lyne, and Guide Bridge Junction," and "Sheffield and Midland Committee."	650,000	150,000	800,000	209,560	Nil	—	—	—
Manchester Ship Canal and Railway	8,000,000	7,412,000	15,412,000	3,997,166	Nil	—	—	—
Manchester, South Junction, and Altrincham	—	216,666	216,666	—	—	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	64,895	—	–	24,000 450	4 5	24,450	89,345	—	* Preferred shares. † Deferred shares.
16,000	5	5	60,234	—	–	21,900	4¼	21,900	82,134	—	
6,686,184 869,532	4½ 4½	3 9/10 Nil	18,943,135	389,866 6,800	3½ 3¾	1,221,352 6,490,038	4 4½	8,108,056	27,051,191	166,638	
—	–	–	61,550	8,000 15,000	3½ 4½	—	–	23,000	84,550	—	
—	–	–	267,080	100,285	3½	—	–	100,285	367,365	—	
400,000 304,100 175,700	4 4 4	4 4 4	2,218,150	—	–	745,054	4	745,054	2,963,204	74,480	
450	*4*	*4*	*450*	—	–	*15,000*	*4*	*15,000*	*15,450*	—	
Vict. c. 233.											
Railway Companies; the Capital is included in the Returns of those Companies.											
190,200	5	Nil	513,250	500 164,740 38,582*	4½ 5 5	—	–	203,822	717,072	—	* Capitalized value of Land Rentcharges.
366,698 1,100,000 3,730,000 1,008,000 5,960,000	3¼ 4 4 5 5	3¼ 4 2 5 2½	22,960,042	44,450	4	79,577 8,242,392 300,000	4 4½ 5	8,666,419	31,626,461	7,318,312	* Preferred Ordinary Stock. † Deferred Ordinary Stock.
100,000	*4*	*4*	*478,285*	—	–	—	–	—	*478,285*	—	
200,000 25,000	3¼ 5	Nil 5	434,560	141,720	4	—	–	141,720	576,280	—	
3,999,959	5	Nil	7,997,125	2,407,000 4,493,500 5,000*	4 4½ 4	—	–	6,905,500	14,902,625	—	* Capitalized value of Land Rentcharges.
—	–	–	—	—	–	216,666	4	216,666	216,666	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Marlborough	*Worked by the Great Western.*							
Maryport and Carlisle	777,800	110,900	888,700	775,800	6⅛	2,000	4*	6⅛
Mawddwy	21,000	7,000	28,000	21,000	Nil	—	—	—
Mellis and Eye	*Worked by the Great Eastern.*							
Merrybent and Darlington	—	—	—	—	—	—	—	—
Mersey	3,510,000	1,469,600	4,979,600	1,084,553	Nil	—	—	—
Methley Railway Joint Committee	The Line is the joint property of the "Great Northern," "Lancashire and Yorkshire," and							
Metropolitan: Railway Capital	9,941,943	3,616,492	13,558,435	5,281,830	2⅞	100,000*	3	2½
Surplus Lands Capital §	2,640,915	—	2,640,915	2,640,915	2⅝	—	—	—
				2,640,915	2⅝	—	—	—
See also "Hammersmith and City."								
Metropolitan District	5,479,444	2,441,000	7,920,444	2,250,000	Nil	1,213,800	4	4
						244,444	4½	4½
						36,200*	4	—
Richmond Extension	350,000	—	350,000	—	—	350,000	4	4
Ealing Extension	250,000	—	250,000	—	—	250,000	4½	4½
Fulham Extension	300,000	—	300,000	—	—	300,000	4½	4½
Worked by the Metropolitan District. — Hounslow and Metropolitan	270,000	90,000	360,000	210,000	Nil	—	—	—
Metropolitan and Metropolitan District, City Lines and Extensions.	Lines owned by the "Metropolitan" and "Metropolitan District" Railway Companies; the							
Metropolitan Outer Circle	1,200,000	400,000	1,600,000	—	—	—	—	—
Mid-Kent (Bromley to St. Mary Cray)	*Leased to the London, Chatham, and Dover.*							
Midland	72,016,837	29,577,430	101,594,267	33,765,432	3⅞	5,994,577	4	4
						3,899,121	4	4
						150,000	6	6
				170,207†	—	*10,235*†	–	–
						1,231,683	*4*	*4*
Leased to or worked by the Midland. — Barnoldswick	40,000	13,300	53,300	27,695	2⅞	—	—	—
Leased to or worked by the Midland. — Kettering, Thrapstone, and Huntingdon.	442,500	75,600	518,100	100,000	¼	342,500	4	4
				100,000	¼	*112,500*	*4*	*4*
See also the "Cheshire Lines Committee," "Midland and Great Northern Railways Joint Committee," "North and South-Western Junction," and "Tottenham and Hampstead Junction."								

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	777,800	1,200†	5	107,695	4	108,895	886,695	—	* Minimum rate. † Capitalized value of Land Rentcharges.
—	–	–	21,000	5,550	5	—	–	5,550	26,550	—	
—	–	–	—	—	–	—	–	—	—	—	
460,892	5	Nil	1,545,445	—	–	695,000 355,714	4½ 5	1,050,714	2,596,159	—	
"North-Eastern" Railway Companies; the Capital is included in the Returns of those Companies.											
3,160,113 350,000	4 4¼	4 4¼	8,891,943 —	50,000† 36,380‡	4 5	555,680 2,293,311 52,745 358,263	3½ 4 4¼ 4½	3,346,379	12,238,322	70,000	* This stock was issued subject to the following conditions, viz., that the dividend for the year ended 30th June 1892 be at the rate of 1 per cent.; for the following 12 months at the rate of 2 per cent., and for each succeeding 12 months at the rate of 3 per cent.
—	–	–	2,640,915	—	–	—	–	—	2,640,915	20,000	† Terminable Debenture Stock, repayable June 18th, 1933.
442,043	*4*	*4*	*3,082,958*	—	–	—	–	—	*3,082,958*	—	‡Capitalized value of Land Rentcharges. §Under the provisions of the Metropolitan Railway Acts, 1885 and 1887, the surplus lands property of the Company was separated from the railway capital.
1,500,000	5	2⅛	5,244,444	10,000† 93,750†	3½ 3½	727,200 1,211,625	4 6	2,042,575	7,287,019	—	* This amount is in the hands of the Company. † Part of the debenture loans to the amount of 25,000*l.* was raised under an Act of 1883 to pay off arrears of passenger duty. The sum is to be redeemed in 20 years from the date of the passing of the Act.
—	–	–	350,000	—	–	—	–	—	350,000	—	Constituted a separate capital and undertaking under Act of 1875, and secured a dividend at the rate of 4 per cent. per annum by the "Midland" Railway Company under the Metropolitan District Railway Act of 1878.
—	–	–	250,000	—	–	—	–	—	250,000	—	Constituted a separate capital and undertaking under Act of 1877.
—	–	–	300,000	—	–	—	–	—	300,000	—	Constituted a separate capital and undertaking under Act of 1878.
53,000	5	Nil	263,000	70,000	4½	—	–	70,000	333,000	—	
Capital is included in the Returns of those Companies.											
—	–	–	—	—	–	—	–	—	—	—	
26,574,118	4	4	70,383,248	745 30,912 20,550	2½ 3 3½	27,711,691	3	27,763,898	98,147,146	9,902,754*	* Consisting of 9,032,965*l.* subscribed to lines the joint property of the "Midland" and other Companies, and 869,789*l.* to other Companies.
3,033,985	*4*	*4*	*4,084,626*	—	–	*5,988,658*	*3*	*5,988,658*	*10,073,284*	—	
—	–	–	27,695	5,028 500	3½ 4	—	–	5,528	33,223	—	† Nominal reduction of capital.
—	–	–	442,500	—	–	75,600	4½	75,600	518,100	—	
—	–	–	*212,500*	—	–	—	–	—	*212,500*	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Midland and Great Northern Railways Joint Committee (Eastern Section).	1,200,000	—	1,200,000	—	—	1,200,000	1½	1½*
Midland and North-Eastern Committee (Swinton to Knottingley.)	The Line is the joint property of the "Midland" and "North-Eastern" Railway Companies;							
Midland and South-Western Junction	743,518	683,368	1,426,886	294,162	Nil	—	—	—
Mid Wales	*Worked by the Cambrian.*							
Milford	*Worked by the Great Western.*							
Milford Haven Dock and Railway	140,000	46,000	186,000	74,230	Nil	—	—	—
Minehead	*Worked by the Great Western.*							
Mold and Denbigh Junction	*Worked by the London and North-Western.*							
Much Wenlock and Severn Junction	*Worked by the Great Western.*							
Mumbles Railway and Pier	81,000	27,000	108,000	27,300	Nil	—	—	—
Muswell Hill and Palace Railway	70,000	10,000	80,000	70,000	Nil	—	—	—
Nantwich and Market Drayton	*Worked by the Great Western.*							
Neath and Brecon	684,790	689,566	1,374,356	256,230	Nil	—	—	—
				—	—	—	—	—
Newport, Godshill, and St. Lawrence	102,000	34,000	136,000	29,300	Nil	—	—	—
Northampton and Banbury Junction	915,000	300,000	1,215,000	109,960	Nil	—	—	—
North and South Western Junction	105,000	33,600	138,600	128,600*	7⅛	—	—	—
North Cornwall	*Worked by the London and South-Western.*							
North-Eastern	49,390,217	17,516,590	66,906,807	26,212,095	5⅞	5,767,378	4	4
						155,000	4½	4½
						483,540	5	5
						1,356,630	6	6
				399,200	5⅞	—	—	—
Leased to or worked by the North-Eastern. Great North of England, Clarence, and Hartlepool Junction	74,900	—*	74,900	41,875	3¼	16,918	4½	4½
Leased to or worked by the North-Eastern. Scarborough and Whitby	400,000	133,333	533,333	33,791	Nil	—	—	—
Leased to or worked by the North-Eastern. Scarborough, Bridlington, and West Riding Junction.	250,000	83,333	333,333	243,975	⅞	—	—	—
Northern and Eastern	*Leased to the Great Eastern.*							
North London *See also* "North and South Western Junction."	3,225,000	1,070,766	4,295,766	2,020,400	6¾	—	—	—
North Metropolitan Railway and Canal	6,201,800	2,230,600	8,432,400	1,358,100*	2	—	—	—
North Pembrokeshire and Fishguard	212,000	54,000	266,000	10,106	Nil	—	—	—
North Staffordshire	6,551,000	2,175,833	8,726,833	3,200,000	4½	1,170,000	5	5
				30,140	4½	—	—	—
Longton, Adderley Green, and Bucknall *See also* "Macclesfield Committee."	50,000	16,000	66,000	46,037	Nil	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	1,200,000	—	–	—	–	—	1,200,000	—	* At the rate of 1½ per cent. per annum for the six months ended 31st December 1893.
the Capital is included in the Returns of those Companies.											
337,464	5	Nil	631,626	—	–	157,588 503,180	4 5	660,768	1,292,394	—	
—	–	–	74,230	—	–	45,481	5	45,481	119,711	—	
—	–	–	27,300	—	–	—	–	—	27,300	—	
—	–	–	70,000	—	–	10,000	4	10,000	80,000	—	Line closed for traffic.
400,402	4	Nil	656,632	—	–	660,624	4	660,624	1,317,256	—	
*257,453**	–	–	*257,453**	—	–	*73,758**	–	*73,758**	*331,211**	—	* Nominal reduction of capital.
—	–	–	29,300	—	–	—	–	—	29,300	—	
145,000 74,770	5 5	Nil Nil	329,730	4,070*	5	115,930 170,058	5 5	290,058	619,788	—	*Capitalized value of Rent-charges.
—	–	–	128,600	—	–	—	–	—	128,600	—	* Under the Companies Clauses Consolidation Act, 1845, the Company created share capital in lieu of loan capital. The line is leased to the "London and North-Western," "Midland," and "North London" Companies.
12,457,302 535,000	4 5½	4 5½	46,966,945	6,200 30,290	3½ 4	14,519,659 1,138,119	4 4½	15,694,268	62,661,213	128,450	
—	–	–	*399,200*	—	–	—	–	—	*399,200*	—	
13,725	5	5	72,518	—	–	—	–	—	72,518	—	* Borrowing powers exercised by the "North-Eastern" Railway Company.
53,718 144,946 160,000	3 5 5	Nil Nil Nil	392,455	—	–	133,333	5	133,333	525,788	—	
—	–	–	243,975	—	–	72,000	4½	72,000	315,975	—	
250,000 700,000	4½ –*	4½ 5	2,970,400	—	–	6,500 964,366	4 4½	970,866	3,941,266	—	* Minimum rate, 4½; maximum, 5.
—	–	–	1,358,100*	—	–	101,852* 200,000*	4 4½	301,852*	1,659,952*	—	* Capital raised for the purpose of the canal only; none has yet been raised for the railway. The ordinary stock is entitled to accumulative dividends at the rate of 4 per cent. per annum after 31st December 1896.
—	–	–	10,106	—	–	—	–	—	10,106	—	
810,000 971,000	4½ 5	4½ 5	6,151,000	—	–	1,912,341 24,560	4½ 4½	1,936,901	8,087,901	219,029	
—	–	–	*30,140*	—	–	—	–	—	*30,140*	—	
—	–	–	46,037	1,000 15,000	5½ 6	—	–	16,000	62,037	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
North Sunderland	21,000	7,000	28,000	—	—	—	—	—
North Wales (narrow gauge)	106,000	54,000	160,000	65,975	Nil	—	—	—
				—	—	—	—	—
Extensions	28,000	9,300	37,300	—	—	—	—	—
Nottingham and Grantham Railway and Canal	*Leased to the Great Northern.*							
Nottingham Suburban	*Worked by the Great Northern.*							
Oldbury	*Worked by the Great Western.*							
Oldham, Ashton-under-Lyne, and Guide Bridge Junction.	340,000	—*	340,000	276,300	Nil	40,000	4¾	4¾
Oxford and Aylesbury Tramroad	85,000	21,250	106,250	—	—	—	—	—
Painswick	33,000	11,000	44,000	—	—	—	—	—
Pembroke and Tenby	421,000	137,700	558,700	79,876	Nil	—	—	—
Penarth Extension	*Leased to the Taff Vale.*							
Penarth Harbour, Dock, and Railway	*Leased to the Taff Vale.*							
Plymouth and Dartmoor	411,000	125,300	536,300	35,000	Nil	—	—	—
Plymouth, Devonport, and South-Western Junction.	*Worked by the London and South-Western.*							
Pontypridd, Caerphilly, and Newport	290,000	80,000	370,000	115,000	Nil	—	—	—
Portmadoc, Croesor, and Beddgelert	48,000	15,980	63,980	20,000	Nil	—	—	—
Princetown	*Worked by the Great Western.*							
Ramsey and Somersham Junction	*Worked by the Great Eastern.*							
Ravenglass and Eskdale	36,000	12,000	48,000	24,000	Nil	—	—	—
Redruth and Chasewater	49,500	9,000	58,500	49,500	Nil	—	—	—
Retford, Rotherham, and Barnsley	1,300,000	433,333	1,733,333	300	Nil	—	—	—
Rhondda and Swansea Bay	891,000	297,000	1,188,000	365,646	½	—	—	—
Rhymney	1,876,478	538,300	2,414,778	586,398	6½	—	—	—
				10,398	6½	—	—	—
Ross and Monmouth	*Worked by the Great Western.*							

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	—	—	–	—	–	—	—	—	
17,390	6	Nil	83,365	—	–	38,277 3,563	4 5	41,840	125,205	—	
—	–	–	—	—	–	*4,600*	*4*	*4,600*	*4,600*	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	316,300	—	–	46,600	4	46,600	362,900	—	* The line is vested jointly in the "London and North-Western" and "Manchester, Sheffield, and Lincolnshire" Railway Companies, and the ordinary capital is subscribed by them. The borrowing powers have been transferred to and are exercised by the Companies jointly.
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	—	—	–	—	–	—	—	—	
242,320	5	$3\frac{3}{8}$	322,196	8,527*	5	3,000 3,500 61,790 28,350 19,900	$3\frac{1}{4}$ $3\frac{1}{2}$ 4 $4\frac{1}{2}$ 5	125,067	447,263	—	* Capitalized value of Land Rentcharges.
75,000 25,000 31,010	5 5 5	$\frac{3}{8}$ $\frac{1}{2}$ Nil	166,010	2,350 3,600 1,900	4 $4\frac{1}{2}$ 5	—	–	7,850	173,860	—	
74,800 35,000	5 5	Nil Nil	224,800	76,500	5	—	–	76,500	301,300	—	
—	–	–	20,000	330 8,000	5 $5\frac{1}{2}$	—	–	8,330	28,330	—	
—	–	–	24,000	—	–	2,600 5,400	6 8	8,000	32,000	—	
—	–	–	49,500	—	–	7,500	5	7,500	57,000	—	
—	–	–	300	—	–	—	–	—	300	—	
209,745	5	5	575,391	25,000*	5	147,000	4	172,000	747,391	—	* Capitalized value of Rentcharges.
979,740 5,340	4 6	4 $6\frac{1}{2}$	1,571,478	—	–	364,299	4	364,299	1,935,777	—	
249,080	*4*	*4*	*259,478*	—	–	—	–	—	*259,478*	—	

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Rowrah and Kelton Fell Mineral	39,000	13,000	52,000	36,230	Nil	—	—	—
Royston and Hitchin	*Leased to the Great Northern.*							
St. Austell and Pentewan Railway, Harbour, and Dock.	*Private property.*							
Salisbury Railway and Market House	*Worked by the London and South-Western.*							
Saundersfoot Railway and Harbour	*Private property.*							
Scarborough and Whitby	*Worked by the North-Eastern.*							
Scarborough, Bridlington, and West Riding Junction.	*Worked by the North-Eastern.*							
Severn and Wye and Severn Bridge	623,163	345,968	969,131	167,348	Nil	—	—	—
				*147,213**	—	*30,000**	—	—
Sheffield and Midland Committee	Line owned by the "Manchester, Sheffield, and Lincolnshire" and "Midland" Railway							
Shortlands and Nunhead	*Worked by the London, Chatham, and Dover.*							
Shrewsbury and Hereford "Great Western" and "London and North-Western" Companies in respect of the.	675,000	—	675,000	—	—	50,000 625,000	4½ 6	4½ 6
Shropshire:								
Shrewsbury (separate Undertaking)	425,000	141,600	566,600	336,097	Nil	—	—	—
Market Drayton (separate Undertaking)	300,000	100,000	400,000	1,163	Nil	—	—	—
Shropshire Mineral (Light)	75,000	25,000	100,000	—	—	—	—	—
Shropshire Union Railways and Canal	*Leased to the London and North-Western.*							
Sidmouth	*Worked by the London and South-Western.*							
Snailbeach District	20,000	6,600	26,600	20,000	Nil	—	—	—
Somerset and Dorset	1,867,000	1,289,513	3,156,513	652,294 360,000*	Nil 3½	—	—	—
South-Eastern	21,026,755	7,065,125*	28,091,880	30 345,000 10 2,873,570 3,412,210† 3,412,210‡ 49§	3½ 3½ 4 5¾ 6 1½ —	984,300 800,000	4½ 5⅛	4½ 5⅛
Leased to or worked by the South-Eastern: Cranbrook and Paddock Wood (Light).	130,000	43,000	173,000	130,000	3¼	—	—	—
Leased to or worked by the South-Eastern: London and Greenwich	1,084,260	233,333	1,317,593	861,540	2¾	—	—	—
Leased to or worked by the South-Eastern: Lydd	91,000	30,333	121,333	89,870	4¼	—	—	—
South Hampshire Railway and Pier	322,000	104,000	426,000	—	—	—	—	
South Leeds Junction	60,000	20,000	80,000	—	—	—	—	—
Southport and Cheshire Lines Extension	*Worked by the Cheshire Lines Committee.*							
South Wales Mineral	167,210	83,000	250,210	55,610	Nil	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	36,230	—	–	10,000	4	10,000	46,230	—	
50,000	4	Nil	623,084	—	–	328,265	4	328,265	951,349	—	In addition to paying interest on loans, &c., the Company paid 1,274*l.* for Land Rentcharges.
107,467	4	Nil									
298,269	4	Nil									
167,456	*4*	*Nil*	*9,757**	—	–	*17,072*	*4*	*17,072*	*7,315*	—	* Nominal reduction of capital.
Companies; the Capital is included in the Returns of those Companies.											
—	–	–	675,000	—	–	—	–	—	675,000	—	
—	–	–	336,097	80,575	5	19,400	5	99,975	436,072	—	
—	–	–	1,163	—	–	—	–	—	1,163	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	20,000	2,220	4½	—	–	2,220	22,220	—	
35,655	4½	Nil	1,223,829	—	–	1,232,380	5	1,232,380	2,456,209	12,000	*Bath extension stock.
175,880	5	Nil									The Company pays an annual sum of 374*l.*, by way of Rentcharge, in respect of land purchased.
408,165	3½	3½	18,067,119	2,000	3	349,666	3½	6,036,821	24,103,940	770,865‖	* Subject to a reduction of 250,000*l.* on account of Rentcharges granted by the Company.
1,018,175	4	4				1,341,215	4				† Preferred Stock.
2,172,580	4⅓	4½				1,500	4½				‡ Deferred Stock.
2,640,820	5	5				4,342,440	5				§ Stock in arrear of calls.
											‖ Consisting of 427,274*l.* subscribed to lines the joint property of the South-Eastern and other Companies and 343,591*l.* to other Companies.
—	–	–	130,000	—	–	—	–	—	130,000	—	
222,720	5	5	1,084,260	64,000	4	29,600	3½	224,860	1,309,120	—	
						131,260	4				
—	–	–	89,870	—	–	25,000	4¼	25,000	114,870	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	—	—	–	—	–	—	—	—	
105,370	6	Nil	160,980	46,700	5	—		49,000	209,980	—	As at 30th September 1893.
				1,300	6						* Capitalized value of Land Rentcharges.
				1,000*	5						

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Southwold	49,000	28,000	77,000	39,910	Nil	—	—	—
South Yorkshire Junction:								
Separate Undertaking	210,000	10,000	220,000	195,300	3½	—	—	—
General Undertaking	85,000	28,266	113,266	—		—	—	—
Staines and West Drayton	*Worked by the Great Western.*							
Stamford and Essendine	*Worked by the Great Northern.*							
Stocksbridge	69,000	23,000	92,000	33,000	Nil	—	—	—
Stonehouse Pool Improvement and Railway	*Worked by the London and South-Western.*							
Stratford-upon-Avon, Towcester, and Midland Junction.	*See* under East and West Junction.							
Sutton and Willoughby	*Worked by the Great Northern.*							
Sutton Bridge Railway and Dock	270,000	89,966	359,966	114,840	Nil	—	—	—
Sutton, Rotherham, and Barnsley	Under Act 56 & 57 Vict. c. 176 the name of the company was changed to Retford,							
Swansea and Mumbles	130,000	50,000	180,000	49,320	Nil	—	—	—
Taff Vale	7,625,777	1,305,142	8,930,919	5,192,284	2⅞	—	—	—
				3,214,284	2⅞	—	—	—
Leased to the Taff Vale. Aberdare	50,000	16,600	66,600	—	—	50,000	10	10
Leased to the Taff Vale. Cowbridge and Aberthaw	90,000	30,000	120,000	90,000	3½	—	—	—
Leased to the Taff Vale. Penarth Extension	15,000	5,000	20,000	15,000	Nil	—	—	—
Leased to the Taff Vale. Penarth Harbour, Dock, and Railway.	772,000	257,000	1,029,000	772,000	5¼	—	—	—
Talyllyn	15,000	5,000	20,000	15,000	Nil	—	—	—
Teign Valley	*Worked by the Great Western.*							
Tenbury Railway "Great Western" and "London and North-Western" Companies in respect of the.	30,000	—	30,000	—	—	30,000	4½	4½
Thetford and Watton	*Worked by the Great Eastern.*							
Tiverton and North Devon	*Worked by the Great Western.*							
Tottenham and Forest Gate	450,000	150,000	600,000	225,000	Nil	—	—	—
Tottenham and Hampstead Junction	510,000	—*	510,000	273,170	5⅓	—	—	—
Vale of Glamorgan	360,000	120,000	480,000	—	—	—	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
9,000	5	Nil	48,910	700* 636*	4 5	11,970 14,300	4 5	27,606	76,516	—	* Capitalized value of Rent-charges.
—	–	–	195,300	—	–	—	–	—	195,300	—	
—	–	–	—	—	–	—	–	—	—	—	
36,000	5	5	69,000	4,000 11,000	4 5	—	–	15,000	84,000	—	
17,200	6	Nil	132,040	35,000 2,700 1,966*	4¼ 5 5	—	–	39,666	171,706	—	* Capitalized value of Rent-charges.
Rotherham, and Barnsley, which *see*.											
67,010	4½	Nil	116,330	20,000 10,000	4 4½	—	–	30,000	146,330	—	
1,959,311	4	4	7,151,595	—	–	1,155,142	3	1,155,142	8,306,737	—	In addition to paying interest on capital, the Company paid 8,021*l.* for Royalties, &c.
331,941	*4*	*4*	*3,546,225*	—	–	*207,147*	*3*	*207,147*	*3,753,372*	—	
—	–	–	50,000	100 9,000	3 3½	—	–	9,100	59,100	—	
—	–	–	90,000	—	–	28,000	3½	28,000	118,000	—	
—	–	–	15,000	—	–	5,000	4	5,000	20,000	—	
—	–	–	772,000	—	–	77,510 179,490	3½ 4	257,000	1,029,000	—	
—	–	–	15,000	—	–	—	–	—	15,000	—	As at 30th September 1893.
—	–	–	30,000	—	–	—	–	—	30,000	—	
225,000	4	Nil	450,000	—	–	150,000	4	150,000	600,000	—	Line not open for traffic.
17,500 36,830 100,000	4 5 5	4 5 5	427,500	—	–	—	–	—	427,500	—	Line worked by the "Great Eastern" and "Midland" Companies. *Borrowing powers vested in the "Midland" Company.
—	–	–	—	—	–	—	–	—	—	—	

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Vale of Llangollen	*Worked by the Great Western.*							
Van	20,000	6,666	26,666	20,000	Nil	—	—	—
Victoria Station and Pimlico	412,500	137,500	550,000	225,000	9	—	—	—
Wainfleet and Firsby	*Worked by the Great Northern.*							
Waterloo and City	540,000	180,000	720,000	—	—	—	—	—
Watton and Swaffham	*Worked by the Great Eastern.*							
Wear Valley Extension	60,000	20,000	80,000	—	—	—	—	—
Wellingborough and District Tramroads	131,000	39,500	170,500	2,000	Nil	—	—	—
Wenlock	*Worked by the Great Western.*							
West Cornwall Railway	*See under Great Western.*							
West Lancashire	777,500	720,010	1,497,510	153,770	Nil	—	—	—
Liverpool, Southport, and Preston Junction.	200,000	66,600	266,600	198,744	Nil	—	—	—
West London	180,380	—	180,380	—	—	101,180 64,000 15,200	2 3½ 6	2 3½ 6
West London Extension	555,000*	22,800	577,800	555,000†	Nil	—	—	—
West Riding and Grimsby Joint Committee	Line owned by the "Great Northern" and "Manchester, Sheffield, and Lincolnshire"							
West Somerset	*Leased to the Great Western.*							
West Somerset Mineral	75,000	30,000	105,000	42,500	5	—	—	—
Weymouth and Portland	75,000	25,000	100,000	75,000	4 0/20	—	—	—
Wigan Junction	*Worked by the Manchester, Sheffield, and Lincolnshire.*							
Wirral	568,000	194,230	762,230	286,670	Nil	—	—	—
Wirral Railways Joint Committee	The line is the joint property of the "Manchester, Sheffield, and Lincolnshire," and "Wrex- Companies.							
Wivenhoe and Brightlingsea	Line sold to "Great Eastern" Company under Acts 29 & 30 Vict. c. 213 and 56 Vict.							
Woodside and South Croydon Joint Committee.	Line owned by the "London, Brighton, and South Coast" and "South-Eastern" Railway							
Woodstock	30,000	10,000	40,000	30,000	Nil	—	—	—
Worcester and Broom	180,000	60,000	240,000	3,500	Nil	—	—	—
Wrexham and Ellesmere	180,000	60,000	240,000	161,310	3*	—	—	—
Wrexham, Mold, and Connah's Quay	907,750	658,415	1,566,165	451,185 *18,749*	Nil *Nil*	—	—	—
Buckley	90,000	30,000	120,000	44,872	5	—	—	—
Wye Valley	*Worked by the Great Western.*							
Total England and Wales	644,800,238	259,565,265	904,365,503	289,651,189	—	85,304,094	—	—
	—	—	—	*13,025,642*	—	*6,476,884*	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	20,000	1,666*	3¾	3,000	6	4,666	24,666	—	* Capitalized value of Land Rentcharges.
130,000	4½	4½	355,000	—	–	132,322	4½	132,322	487,322	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	2,000	—	–	—	–	—	2,000	—	
532,416	5	Nil	686,186	—	–	10,884	3½	665,290	1,351,476	—	
						654,406	5				
—	–	–	198,744	—	–	66,600	5	66,600	265,344	—	
—	–	–	180,380	—	–	—	–	—	180,380	—	
—	–	–	555,000	18,300	4	—	–	18,300	573,300	—	* Amount authorised to be subscribed by the owning Companies.
Railway Companies; the Capital is included in the Returns of those Companies.											† Amount subscribed by the owning Companies.
32,500	6	6	75,000	13,700	5	16,300	5	30,000	105,000	10,000	
—	–	–	75,000	—	–	14,250	4	25,000	100,000	—	Line worked by the "Great Western" and "London and South-Western" Companies.
						10,750	4½				
130,000	4½	4½	416,670	105,930	4	55,000	4	160,930	577,600	—	
ham, Mold, and Connah's Quay" Railway Companies; the Capital is included in the Returns of those											Line in course of construction.
c. 52.											
Companies; the Capital is included in the Returns of those Companies.											
—	–	–	30,000	—	–	10,000	4½	10,000	40,000	—	
—	–	–	3,500	—	–	—	–	—	3,500	—	
—	–	–	161,310	—	–	13,753	4	13,753	175,063	—	* Rate of interest paid during construction, as authorised by the Company's Act of 1888.
112,794	4	Nil	563,979	436*	5	493,817	4	494,253	1,058,232	—	* Capitalized value of Land Rentcharges.
—	–	–	*18,749*	—	–	*48,909*†	–	*48,909*†	*30,160*†	—	† Nominal reduction of Capital.
19,800	5	5	64,672	—	–	—	–	—	64,672*	—	* Exclusive of 1,200*l.* ordinary capital, 200*l.* preference capital, and 20,000*l.* debentures exchanged for A. Debenture Stock of the Wrexham, Mold, and Connah's Quay Railway Company.
200,255,866	–	–	575,211,149	11,681,701	–	213,787,827	–	225,469,528	800,680,677	32,102,887	TOTAL ENGLAND AND WALES.
13,813,923	–	–	*33,816,399*	—	–	*20,968,224*	–	*20,968,224*	*54,284,623*	—	

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Vale of Llangollen	*Worked by the Great Western.*							
Van	20,000	6,666	26,666	20,000	Nil	—	—	—
Victoria Station and Pimlico	412,500	137,500	550,000	225,000	9	—	—	—
Wainfleet and Firsby	*Worked by the Great Northern.*							
Waterloo and City	540,000	180,000	720,000	—	—	—	—	—
Watton and Swaffham	*Worked by the Great Eastern.*							
Wear Valley Extension	60,000	20,000	80,000	—	—	—	—	—
Wellingborough and District Tramroads	131,000	39,500	170,500	2,000	Nil	—	—	—
Wenlock	*Worked by the Great Western.*							
West Cornwall Railway	*See under Great Western.*							
West Lancashire	777,500	720,010	1,497,510	153,770	Nil	—	—	—
Liverpool, Southport, and Preston Junction.	200,000	66,600	266,600	198,744	Nil	—	—	—
West London	180,380	—	180,380	—	—	101,180 64,000 15,200	2 3½ 6	2 3½ 6
West London Extension	555,000*	22,800	577,800	555,000†	Nil	—	—	—
West Riding and Grimsby Joint Committee	Line owned by the "Great Northern" and "Manchester, Sheffield, and Lincolnshire"							
West Somerset	*Leased to the Great Western.*							
West Somerset Mineral	75,000	30,000	105,000	42,500	5	—	—	—
Weymouth and Portland	75,000	25,000	100,000	75,000	4 3/20	—	—	—
Wigan Junction	*Worked by the Manchester, Sheffield, and Lincolnshire.*							
Wirral	568,000	194,230	762,230	286,670	Nil	—	—	—
Wirral Railways Joint Committee	The line is the joint property of the "Manchester, Sheffield, and Lincolnshire," and "Wrex- Companies.							
Wivenhoe and Brightlingsea	Line sold to "Great Eastern" Company under Acts 29 & 30 Vict. c. 213 and 56 Vict.							
Woodside and South Croydon Joint Committee.	Line owned by the "London, Brighton, and South Coast" and "South-Eastern" Railway.							
Woodstock	30,000	10,000	40,000	30,000	Nil	—	—	—
Worcester and Broom	180,000	60,000	240,000	3,500	Nil	—	—	—
Wrexham and Ellesmere	180,000	60,000	240,000	161,310	3*	—	—	—
Wrexham, Mold, and Connah's Quay	907,750	658,415	1,566,165	451,185	Nil	—	—	—
				18,749	*Nil*	—	—	—
Buckley	90,000	30,000	120,000	44,872	5	—	—	—
Wye Valley	*Worked by the Great Western.*							
Total England and Wales	644,800,238	259,565,265	904,365,503	289,651,189	—	85,304,094	—	—
	—	—	—	*13,025,642*	—	*6,476,834*	—	—

31st December 1893.—ENGLAND AND WALES—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	20,000	1,666*	3¾	3,000	6	4,666	24,666	—	* Capitalized value of Land Rentcharges.
130,000	4½	4½	355,000	—	–	132,322	4½	132,322	487,322	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	2,000	—	–	—	–	—	2,000	—	
532,416	5	Nil	686,186	—	–	10,884 654,406	3½ 5	665,290	1,351,476	—	
—	–	–	198,744	—	–	66,600	5	66,600	265,344	—	
—	–	–	180,380	—	–	—	–	—	180,380	—	
—	–	–	555,000	18,300	4	—	–	18,300	573,300	—	* Amount authorised to be subscribed by the owning Companies.
Railway Companies; the Capital is included in the Returns of those Companies.											† Amount subscribed by the owning Companies.
32,500	6	6	75,000	13,700	5	16,300	5	30,000	105,000	10,000	
—	–	–	75,000	—	–	14,250 10,750	4 4½	25,000	100,000	—	Line worked by the "Great Western" and "London and South-Western" Companies.
130,000	4½	4½	416,670	105,930	4	55,000	4	160,930	577,600	—	
ham, Mold, and Connah's Quay" Railway Companies; the Capital is included in the Returns of those											Line in course of construction.
c. 52.											
Companies; the Capital is included in the Returns of those Companies.											
—	–	–	30,000	—	–	10,000	4½	10,000	40,000	—	
—	–	–	3,500	—	–	—	–	—	3,500	—	
—	–	–	161,310	—	–	13,753	4	13,753	175,063	—	* Rate of interest paid during construction, as authorised by the Company's Act of 1888.
112,794	4	Nil	563,979	436*	5	493,817	4	494,253	1,058,232	—	* Capitalized value of Land Rentcharges.
—	–	–	*18,749*	—	–	*48,909*†	–	*48,909*†	*30,160*†	—	† Nominal reduction of Capital.
19,800	5	5	64,672	—	–	—	–	—	64,672*	—	* Exclusive of 1,200*l.* ordinary capital, 200*l.* preference capital, and 20,000*l.* debentures exchanged for A. Debenture Stock of the Wrexham, Mold, and Connah's Quay Railway Company.
200,255,866	–	–	575,211,149	11,681,701	–	213,787,827	–	225,469,528	800,680,677	32,102,887	TOTAL ENGLAND AND WALES.
13,813,923	–	–	*33,316,399*	—	–	*20,968,224*	–	*20,968,224*	*54,284,623*	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Aberlady, Gullane, and North Berwick	66,000	22,000	88,000	—	—	—	—	—
Anstruther and St. Andrews	*Worked by the North British.*							
Arbroath and Forfar	*Leased to the Caledonian.*							
Ayr and Maybole	*Leased to the Glasgow and South-Western.*							
Brechin and Edzell District	42,500	14,166	56,666	5,711	Nil	—	—	—
Caledonian	37,606,610	9,973,411	47,580,021	13,462,444 2,508,027* 276,666†	4⅜ Nil Nil	8,549,654‡	4	4
				2,784,693	*Nil*	*2,182,894*	*4*	*4*
Leased to or worked by the Caledonian. — Arbroath and Forfar	250,000	16,666	266,666	189,950	5⅝	40,000	5	5⅝
Leased to or worked by the Caledonian. — Callander and Oban	583,900	194,600	778,500	276,710	2¼	—	—	—
Leased to or worked by the Caledonian. — Cathcart District	284,000	194,330	478,330	280,880	Nil	—	—	—
Leased to or worked by the Caledonian. — Crieff and Comrie	45,000	15,000	60,000	43,861	Nil	—	—	—
Leased to or worked by the Caledonian. — Dundee and Newtyle	140,000	30,000	170,000	111,650	1⅓	—	—	—
Leased to or worked by the Caledonian. — Killin	27,000	9,000	36,000	20,785	Nil	—	—	—
Leased to or worked by the Caledonian. — Lanarkshire and Ayrshire	325,000	225,000	550,000	281,800	2	—	—	—
Leased to or worked by the Caledonian. — Solway Junction	398,000	146,000	544,000	329,186	Nil	—	—	—
Callander and Oban	*Worked by the Caledonian.*							
Cathcart District	*Worked by the Caledonian.*							
City of Glasgow Union	1,200,000	216,600	1,416,600	600,000	5	550,000	5	5
Crieff and Comrie	*Worked by the Caledonian.*							
Dundee and Newtyle	*Leased to the Caledonian.*							
Dundee Suburban	250,000	83,300	333,300	37,000	Nil	—	—	—
East Fife Central	250,000	83,300	333,300	—	—	—	—	—
Edinburgh and Bathgate	*Leased to the North British.*							
Eyemouth	*Worked by the North British.*							

31st December 1893.—SCOTLAND.

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

Share Capital.				Capital raised by Loans and Debenture Stock.					Total Capital paid up and raised by Loans and Debenture Stock.	Subscriptions to other Companies.	Remarks.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	5,711	—	–	—	–	—	5,711	—	
8,723,151 1,639,890	4 5	4 5	35,159,832	—	–	8,810,013	4	8,810,013	43,969,845	1,143,031	As at 31st January 1894. *Deferred ordinary stock No. 1.
1,475,008	*4*	*4*	*6,442,595*	—	–	—	–	—	*6,442,595*	—	†Deferred ordinary stock No. 2. ‡This amount includes two sums, viz., 590,375*l.* and 283,825*l.*, a moiety of the dividends on which are repaid by the "North British" and "Glasgow and South-Western" Companies respectively to the "Caledonian" Company.
—	–	–	229,950	—	–	—	–	—	229,950	—	
305,000	4½	4½	581,710	69,327	3¼	84,841	4	154,168	735,878	—	As at 31st January 1894.
—	–	–	280,880	—	–	170,495	4	170,495	451,375	—	As at 31st January 1894.
—	–	–	43,861	7,100	3½	—	–	7,100	50,961	—	As at 31st January 1894.
—	–	–	111,650	—	–	—	–	—	111,650	—	As at 30th April 1894.
4,000	4	4	24,785	6,000	3½	—	–	6,000	30,785	—	As at 31st January 1894.
42,150	4½	4	323,950	75,000	3½	100,000 50,000	3½ 4	225,000	548,950	—	As at 31st January 1894.
—	–	–	329,186	—	–	138,183	3½	138,183	467,369	—	
—	–	–	1,150,000	15,400 36,817	3 3¼	76,685	4	128,902	1,278,902	—	As at 31st January 1894.
—	–	–	37,000	—	–	—	–	—	37,000	—	
—	–	–	—	—	–	—	–	—	—	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Findhorn	9,000	3,000	12,000	8,962	Nil	—	—	—
Forfar and Brechin	128,400	40,000	168,400	111,890	Nil	—	—	—
Forth and Clyde Junction	*Leased to the North British.*							
Forth Bridge	*Worked by the North British.*							
Gifford and Garvald	75,000	25,000	100,000	—	—	—	—	—
Glasgow and South-Western	12,311,711	3,476,800	15,788,511	4,927,920	3½	1,325,000	4	4
				442,250	Nil	935,450	4	4
				442,250	*Nil*	*187,090*	*4*	*4*
Leased to or worked by the Glasgow and South-Western: Ayr and Maybole	34,500	—*	34,500	34,500	7	—	—	—
Leased to or worked by the Glasgow and South-Western: Kilmarnock and Troon	40,000	—	40,000	40,000	3	—	—	—
Glasgow District Subway Company	750,000	187,500	937,500	600,000	3*	—	—	—
				55,220†	3*			
Glasgow, Yoker, and Clydebank	*Worked by the North British.*							
Great North of Scotland	4,852,698	1,369,354	6,222,052	920,132	3½	1,230,252	4	4
				102,822*	½	363,862	4	4
				397,396†	Nil			
				102,822	*½*	*351,666*	*4*	*4*
				397,396†	*Nil*			
Greenock and Wemyss Bay	Amalgamated with the Caledonian under Act 56 & 57 Vict. c. 179.							
Highland	4,173,113	1,723,013	5,896,126	2,095,383	4⅞	76,000	6	6
Killin	*Worked by the Caledonian.*							
Kilmarnock and Troon	*Leased to the Glasgow and South-Western.*							
Kilsyth and Bonnybridge	136,000	45,300	181,300	131,980	⅜	—	—	—
Kirkcaldy and District	504,000	168,000	672,000	110,820	Nil	—	—	—
Lanarkshire and Ayrshire	*Worked by the Caledonian.*							
Lanarkshire and Dumbartonshire	987,000	312,333	1,299,333	612,500	—*	—	—	—
Newport	*Leased to the North British.*							
North British	39,471,522	13,631,948	53,103,470	9,163,650	⅝	—	—	—
				6,741,165	3			
				9,163,650	*⅝*	—	—	—

31st December 1893.—SCOTLAND—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	8,962	1,750	4½	—	–	1,750	10,712	—	The revenue never paid the working expenses, and in consequence the working of the line was discontinued in 1869.
—	–	–	111,890	40,000	4	—	–	40,000	151,890	—	
—	–	–	—	—	–	—	–	—	—	—	
1,892,150	4	4	11,906,711	5,000	2⅔	3,002,111	4	3,075,791	14,982,502	423,558	As at 31st January 1894.
1,555,941	4	4		27,370	3						* Capitalized value of Land Rentcharges.
285,000	4	4		41,310*	5						
543,000	4	4									
358,430	*4*	*4*	*1,163,711*	—	–	—	–	—	*1,163,711*	—	
175,941	*4*	*4*									
—	–	–	34,500	—	–	—	–	—	34,500	—	* Borrowing powers transferred to the "Glasgow and South-Western" Company.
—	–	–	40,000	—	–	—	–	—	40,000	—	
—	–	–	655,220	—	–	—	–	—	655,220	—	*Rate of interest paid. †Amount paid in advance of calls.
593,556	4	4	4,460,758	38,802	3	1,040,479	4	1,171,072	5,631,830	—	As at 31st January 1894.
405,000	4	4		56,500	3¼						* Deferred ordinary stock No. 1 entitled to participate *pari passu* with the ordinary stock in any dividend beyond 8 per cent.
247,738	4	4		35,291	3⅖						
200,000	4	4									
110,985	*4*	*4*	*985,606*	—	–	*50,301*	*4*	*50,301*	*1,035,907*	—	† Deferred ordinary stock No. 2 entitled to participate *pari passu* with the ordinary stock and deferred stock No. 1 in any dividend beyond 5 per cent.
22,737	*4*	*4*									
515,000	4	4	3,704,113	—	–	1,266,307	4	1,656,340	5,360,453	—	As at 28th February 1894.
513,650	4½	4½				390,033	4¼				
400,000	5	5									
45,000	5	5									
59,080	6	6									
—	–	–	131,980	—	–	43,300	4	43,300	175,280	—	As at 31st January 1894.
—	–	–	110,820	—	–	—	–	—	110,820	—	The line is worked by the "Caledonian" and "North British" Railway Companies.
—	–	–	612,500	—	–	-	–	—	612,500	—	As at 31st January 1894. *Interest at the rate of 3 per cent. per annum was paid on the paid-up capital.
5,170	1½	1½	38,178,442	59,942	3	12,492,573	3	12,894,486	51,072,928	868,245	As at 31st January 1894.
13,433,293	4	4		266,404	3¼						*At the rate of 4 per cent. per annum from the date at which the dividend accrued, viz., 1st August, 1893.
5,360,262	4½	4½		73,000	3⅜						
1,411,603	5	5		217	3⅝						
563,379	6	6		2,350	4						
1,499,920	4	4*									
2,381,364	*4*	*4*	*11,345,014*	—	–	*3,265,485*	*3*	*3,265,485*	*14,810,499*	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
North British—*cont.*	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Leased to or worked by the North British.								
Anstruther and St. Andrew's	117,000	39,000	156,000	56,885 5,000*	Nil Nil	—	—	—
Edinburgh and Bathgate	250,000	—	250,000	250,000	5	—	—	—
Eyemouth	30,000	10,000	40,000	19,990	3	—	—	—
Forth and Clyde Junction	192,000	64,000	256,000	106,390	7	64,000	5	5
Forth Bridge	2,325,000	774,999	3,099,999	2,325,000	4	—	—	—
Glasgow, Yoker, and Clydebank	208,500	69,430	277,930	91,000	5¼	—	—	—
Newport	46,000	15,300	61,300	46,000	4⅓	—	—	—
Portpatrick and Wigtownshire Joint Committee.	491,980	188,000	679,980	—	—	491,980	3½	3½
Solway Junction	*Leased to the Caledonian.*							
West Highland	629,000	197,000	826,000	117,472 465,272*	Nil 5	—	—	—
TOTAL SCOTLAND	109,230,434	33,563,350	142,793,784	48,404,269 *12,890,811*	— —	13,626,198 *2,721,650*	— —	— —

31st December 1893.—SCOTLAND—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
55,000	5	2	116,885	—	–	34,700	4	34,700	151,585	—	As at 31st January 1894. * Deferred ordinary shares.
—	–	–	250,000	—	–	—	–	—	250,000	—	
—	–	–	19,990	—	–	5,000	3	5,000	24,990	—	
4,520 16,480	5 6	5 6	191,390	—	–	61,595	4	61,595	252,985	—	As at 31st January 1894.
—	–	–	2,325,000	—	–	723,333	4	723,333	3,048,333	—	
—	–	–	91,000	—	–	28,242	4	28,242	119,242	—	As at 31st January 1894.
—	–	–	46,000	6,000	3	5,100 4,200	3½ 4	15,300	61,300	—	
—	–	–	491,980	53,931	3½	—	–	53,931	545,911	—	As at 31st January 1894.
—	–	–	582,744	90,000	3½	—	–	90,000	672,744	—	* Amount paid in advance of calls on which interest was paid.
40,318,933	–	–	102,349,400	1,007,511	–	28,527,190	–	29,534,701	131,884,101	2,434,834	TOTAL SCOTLAND.
4,524,465	–	–	*20,136,926*	—	–	*3,315,786*	–	*3,315,786*	*23,452,712*	—	

No. 1.—AMOUNT OF CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Athenry and Ennis Junction	Amalgamated with the Waterford and Limerick under Act 56 & 57 Vict. c. 164.							
Athenry and Tuam	Sold to the Waterford and Limerick under Act 56 & 57 Vict. c. 164.							
Ballycastle	90,000	45,000	135,000	51,574	Nil	*10,000	5	4¼
Belfast and County Down (*See* also Downpatrick, Killough, and Ardglass, page 46.)	991,091	386,166	1,377,257	319,050	6⅓	17,000	3	3
Belfast and Northern Counties	1,903,838	778,819	2,682,657	816,989	5	—	—	—
				—	—	—		—
Leased to or worked by the Belfast and Northern Counties. — Derry Central	220,000	100,000	320,000	25,230	Nil	60,000	5	5
Leased to or worked by the Belfast and Northern Counties. — Draperstown	40,000	20,000	60,000	11,938	Nil	17,000	5	5
Leased to or worked by the Belfast and Northern Counties. — Limavady and Dungiven	75,000	25,000	100,000	20,000* 46,733	5 Nil	—	—	—
Central Ireland Railways	*See under Waterford and Central Ireland.*							
City of Dublin Junction	*See under Dublin, Wicklow, and Wexford.*							
Clara and Banagher	*Worked by the Great Southern and Western of Ireland.*							
Clonakilty Extension	*Worked by the Cork, Bandon, and South Coast.*							
Cork and Fermoy	455,000	227,500	682,500	400	Nil	—	—	—
Cork and Fermoy and Waterford and Wexford	Under Act 56 Vict. ch. 46 the name of the Company was changed to Cork and Fermoy,							
Cork and Macroom Direct	136,200	99,168	235,368	92,040	1¾	—	—	—
Cork, Bandon, and South Coast (*See* also Baltimore Extension, p. 46 and Bantry Bay Extension, p. 46.)	564,638	179,000	743,638	240,000	2¼	—	—	—
Worked by the Cork, Bandon, and South Coast. — Bantry Extension	70,000	35,000	105,000	30,000	Nil	40,000	5	5
Worked by the Cork, Bandon, and South Coast. — Clonakilty Extension	40,000	20,000	60,000	25,000	Nil	15,000*	5	5
Worked by the Cork, Bandon, and South Coast. — Ilen Valley	80,000	40,000	120,000	27,000	Nil	53,000	5	5
Cork, Blackrock, and Passage	158,000	53,930	211,930	118,340	1¾	—	—	—
Derry Central	*Worked by the Belfast and Northern Counties.*							
Derry City and County	380,000	175,000	555,000	—	—	—	—	—

31st December 1893.—IRELAND.

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

Share Capital.				Capital raised by Loans and Debenture Stock.					Total Capital paid up and raised by Loans and Debenture Stock.	Subscriptions to other Companies.	Remarks.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
—	–	–	61,574	20,000 10,000	4 5	—	–	30,000	91,574	—	* Baronial Guaranteed Shares.
200,000 50,000 248,141	4 4½ 5	4 4½ 5	834,191	3,807*	5	138,000 162,166	3 4	302,973	1,138,164	7,500	* Capitalized value of Land Rentcharges.
993,025	4	4	1,810,014	—	–	718,502	4	718,502	2,528,516	117,486	
55,575	*4*	*4*	*55,575*	—	–	—	–	—	*55,575*	—	
35,110	5	Nil	120,340	100,000	4	—	–	100,000	220,340	—	
430	5	Nil	29,368	15,000*	4	—	–	15,000	44,368	—	* Borrowed from the Board of Works.
—	–	–	66,733	19,601	4	—	–	19,601	86,334	—	* Interest at 5 per cent. per annum guaranteed on this amount for 23 years from the opening of the railway by the "Skinners" Company of London.
—	–	–	400	—	–	—	–	—	400	—	
which *see*.											
44,150	5	5	136,190	4,120	4	64,760	4	68,880	205,070	—	
264,872 48,000	4 5½	4 5½	552,872	—	–	90,519 71,656	4 4½	162,175	715,047	17,500	In addition to the sums raised by the issue of stocks and shares, the Government have paid the Company 15,000*l.* towards the cost of the construction of the Bantry Bay Extension line, *see* p. 46.
—	–	–	70,000	—	–	35,000	5	35,000	105,000	—	
—	–	–	40,000	8,150	4	11,850	4	20,000	60,000	—	* Baronial Guaranteed Shares.
—	–	–	80,000	3,150	4	36,850	4	40,000	120,000	—	
18,640 2,000	4½ 5	4½ 5	138,980	2,200	4	40,150 300 2,500	4 4½ 4½	45,150	184,130	—	
—	–	–	—	—	–	—	–	—	—	—	

No. 1.—AMOUNT of CAPITAL, &c., upon the

NOTE.—The figures in *italics* show the amounts (included in the figures in Roman type) by

NAME OF COMPANY.	AUTHORISED CAPITAL.			PAID-UP STOCK AND				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Donegal (*See* also Donegal and Killybegs, and Stranorlar and Glenties, p. 46.)	182,000	106,000	288,000	58,700	Nil	24,760	5	5
Draperstown	*Worked by the Belfast and Northern Counties.*							
Dublin and Kingstown	*Leased to the Dublin, Wicklow, and Wexford.*							
Dublin, Wicklow, and Wexford	1,815,000	718,233	2,533,233	700,150	¾	—	—	—
City of Dublin Junction	300,000	100,000	400,000	25,000	Nil	225,000	4	4
Leased to the Dublin, Wicklow, and Wexford. } Dublin and Kingstown	350,000	110,000	460,000	350,000	9½	—	—	—
Dundalk, Newry, and Greenore	451,000	—*	451,000	355,900	Nil	—	—	—
Enniskillen, Bundoran, and Sligo	*Worked by the Great Northern of Ireland.*							
Fermoy and Lismore	*Worked by the Waterford, Dungarvan, and Lismore.*							
Great Northern of Ireland	5,732,514	2,152,888	7,885,402	3,489,117	6	869,270	4	4
				—	—	*141,854*	*4*	*4*
Worked by the Grt. Northern of Ireland. } Enniskillen, Bundoran, and Sligo.	300,000	256,853	556,853	46,850	Nil	—	—	—
Great Southern and Western of Ireland (*See also* Mitchelstown and Fermoy, p. 46, and Headford and Kenmare and Killorglin and Valentia, p. 46.)	6,309,940	2,320,879	8,630,819	4,970,455	5⅛	—	—	—
Worked by the Gt. Southern and Western of Ireland. } Clara and Banagher	85,000	68,300	153,300	60,219	Nil	—	—	—
Ilen Valley	*Worked by the Cork, Bandon, and South Coast.*							
Kilkenny Junction	*Worked by the Waterford and Central Ireland.*							
Kingstown and Kingsbridge Junction	300,000	150,000	450,000	—	—	—	—	—
Letterkenny	*Worked by the Londonderry and Lough Swilly.*							
Limavady and Dungiven	*Worked by the Belfast and Northern Counties.*							
Limerick and Kerry	*Worked by the Waterford and Limerick.*							
Listowel and Ballybunion	22,000	11,000	33,000	22,000	Nil	—	—	—
Londonderry and Lough Swilly	135,000	36,052	171,052	41,489	4¼	—	—	—
Worked by the Londonderry and Lough Swilly. } Letterkenny	150,000	123,000	273,000	57,155	Nil	—	—	—

31st December 1893.—IRELAND—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
20,680	4	Nil	104,140	43,000	4	30,462	5	73,462	177,602	—	As at 1st November 1893.
120,000	4	4	1,770,150	—	–	320,812	4	673,227	2,443,377	—	
150,000	4½	4½				257,985	4¼				
600,000	5	5				94,430	4½				
200,000	6	6									
50,000	4	Nil	300,000	—	–	14,500	4	14,500	314,500	—	
—	–	–	350,000	300	Nil	61,000	3½	61,300	411,300	—	
—	–	–	355,900	—	–	—	–	—	355,900	—	* Borrowing powers transferred to the "London and North-Western" Railway Company.
1,150,885	4	4	5,509,272	—	–	2,023,285	4	2,023,285	7,532,557	2,000	
6,310	*4*	*4*	*148,164*	—	–	*120,300*	*4*	*120,300*	*268,464*	—	
100,000	5	Nil	146,850	88,663	4	153,453	3	252,116	398,966	—	
						10,000	5				
1,329,100	4	4	6,299,555	—	–	2,198,575	4	2,198,575	8,498,130	13,000	
20,000	5	Nil	80,219	65,770	4	—	–	65,770	145,989	—	
—	–	–	—	—	–	—	–	—	—	—	
—	–	–	22,000	11,000	5	—	–	11,000	33,000	—	
49,625	5	5	91,114	7,766	4	6,400	4	34,914	126,028	—	
				11,748	5	9,000	5				
—	–	–	57,155	85,000	4	—	–	87,750	144,905	—	
				2,750	5						

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
	£	£	£	£	Per cent.	£	Per cent.	Per cent.
Midland Great Western of Ireland (*See* also Ballinrobe and Claremorris and Loughrea and Attymon, page 44, and Ballina and Killala, Galway and Clifden, and Westport and Mallaranny, p. 46.)	4,131,980	2,331,300	6,463,280	2,370,000	4¾	452,236	4	4
Parsonstown and Portumna Bridge	—*	—*	—*	—	—	—	—	—
Rathkeale and Newcastle Junction	*Worked by the Waterford and Limerick.*							
Sligo, Leitrim, and Northern Counties	240,000	120,000	360,000	100,000	Nil	50,000	5	5
Southern	*Worked by the Waterford and Limerick.*							
Tralee and Fenit	*Worked by the Waterford and Limerick.*							
Waterford and Central Ireland	450,000	196,000	646,000	250,000	Nil	—	—	—
Central Ireland Railways	120,000	40,000	160,000	15,000 12,480	4½ 5	—	—	—
Worked by the Waterford and Central Ireland. Kilkenny Junction	214,000	256,480	470,480	60,575	Nil	—	—	—
Waterford and Limerick (*See* also Collooney and Claremorris, p. 46.)	1,723,530	940,131	2,663,661	597,550	Nil	2,560	4	—*
Leased to or worked by the Waterford and Limerick. Limerick and Kerry	124,950*	285,050*	410,000	110,000	Nil	14,950	5	5
Leased to or worked by the Waterford and Limerick. Rathkeale and Newcastle Junction.	28,180	93,000	121,180	16,513	Nil	—	—	—
Leased to or worked by the Waterford and Limerick. Southern	201,000	181,900	382,900	71,320	Nil	62,900	5	5
Leased to or worked by the Waterford and Limerick. Tralee and Fenit	45,000	15,000	60,000	13,850	Nil	30,000	5	5
Waterford and Tramore	58,000	19,350	77,350	48,000	3½	—	—	—
Waterford and Wexford	200,100	66,700	266,800	62,984	Nil	—	—	—
Waterford, Dungarvan, and Lismore	280,000	113,333	393,333	280,000	5*	—	—	—
Worked by the Waterford, Dungarvan, and Lismore. Fermoy and Lismore	100,000	33,000	133,000	100,000	Nil	—	—	—
Total Ireland	29,252,961	13,029,032	42,281,993	16,109,601 —	— —	1,943,676 141,854	— —	— —

31st December 1893.—IRELAND—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
£	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
830,000	4	4	3,952,236	—	–	1,182,434	4	2,153,473	6,105,709	—	
300,000	5	5				769,339	4¼				
						201,700	4½				
—	–	–	—	—	–	—	–	—	—	—	* The line was taken possession of by a creditor on 6th January 1879, and has been closed for traffic since that date.
50,000	5	Nil	200,000	100,000	4	—	–	100,000	300,000	—	
196,885	6	4½	446,885	22,060	4	3,800	4	192,623	639,508	8,750	As at 29th September 1893.
				2,300	4¼	54,590	4¼				
				14,885	4½	12,700	4½				
						82,288	5				
—	–	–	27,480	—	–	—	–	—	27,480	—	As at 29th September 1893.
40,880	6	Nil	101,455	2,320*	5	233,871	5	236,191	337,646	1,898	As at 1st November 1893. * Capitalized value of Land Rentcharges.
318,950	4	4	1,566,385	—	–	469,340	4	893,464	2,459,849	117,562	*Dividend did not accrue in 1893.
362,900	4½	4½				41,150	4¼				
255,275	5	5				10,000	4⅜				
29,150	5½	5½				372,974	4½				
—	–	–	124,950	15,800	6	172,550	4	279,618	404,568	—	* The Company was authorised by its Act of 1884 to convert the guaranteed shares and debenture loans into debenture stock.
						17,500	4				
						73,768	4				
10,050	5	Nil	26,563	16,600	5	2,300	4½	93,000	119,563	—	
						74,100	5				
67,650	5	Nil	201,870	69,594	4	34,803	4	104,397	306,267	—	
—	–	–	43,850	15,000	5	—	–	15,000	58,850	—	
10,000	5	5	58,000	13,550	4	—	–	18,850	76,850	—	
				5,300	4¼						
—	–	–	62,984	66,700	5	—	–	66,700	129,684	—	
—	–	–	280,000	93,270	4	—	–	113,270	393,270	—	* This dividend is payable by presentment to be levied off the rateable property of the county of Waterford, and of the county of the city of Waterford, for five years granted for the construction of the railway, and for 35 years after its opening for public traffic.
				20,000	5						
—	–	–	100,000	32,055	5	—	–	32,055	132,055	—	
8,166,398	–	–	26,219,675	991,459	–	10,361,362	–	11,352,821	37,572,496	285,696	TOTAL IRELAND.
61,885	–	–	*203,739*	—	–	*120,300*	–	*120,300*	*324,039*	—	

No. 1.—Amount of Capital, &c., upon the

Note.—The figures in *italics* show the amounts (included in the figures in Roman type) by

Name of Company.	Authorised Capital.			Paid-up Stock and				
				Ordinary.		Guaranteed.		
	By Shares and Stock.	By Loans and Debenture Stock.	Total.	Amount.	Rate of Dividend paid.	Amount.	Guaranteed Rate of Dividend.	Rate of Dividend paid.
LIGHT RAILWAYS AUTHORISED UNDER THE								
Athenry and Tuam Extension to Claremorris	£ 100,000	£ —	£ 100,000	£ 2,000	Per cent. Nil	£ 90,210	Per cent. 4	Per cent. Nil
Ballinlscarthy and Timoleague Junction -	*See* under Timoleague and Courtmacsherry Extension.							
Ballinrobe and Claremorris - - -	See note, page iii.							
Bessbrook and Newry Tramway - -	20,000	6,500	26,500	15,000	Nil	—	—	—
Bray and Enniskerry - - -	50,000	25,000	75,000	17,500 7,500	Nil Nil	—	—	—
Carrickfergus Harbour Junction - -	7,500	5,000	12,500	730	Nil	6,500	5	5
Cavan, Leitrim, and Roscommon Light Railway and Tramway.	300,000	—	300,000	—	—	200,200	5	5
Clogher Valley Tramway - - -	150,000	—	150,000	—	—	121,580	5	5
Cork and Muskerry - - - -	75,000	—	75,000	—	—	75,000	5	5
Donoughmore Extension - - -	35,000	—	35,000	2,500	Nil	28,189	4	4
Loughrea and Attymon - - -	*See* note, page iii.							
Macroom and Ballyvourney - -	60,000	—	60,000	—	—	—	—	—
Mitchelstown and Fermoy - - -	60,000	—	60,000	—	—	60,000	5	5
Schull and Skibbereen Tramway and Light Railway.	57,000	—	57,000	—	—	57,000	5	5
Schull and Skibbereen Tramway and Light Railway Extension.	1,500	—	1,500	—	—	—	—	—
South Clare - - - - -	140,000	—	140,000	20,000	Nil	117,170	4	4
Timoleague and Courtmacsherry Extension and Ballinlscarthy and Timoleague Junction.	35,000	—	35,000	—	—	35,000	5	5
Tralee and Dingle - - - - -	150,000	—	150,000	30,000	Nil	120,000	4	4
West Clare (Limited) - - - -	180,000	—	180,000	16,500	Nil	163,500	4	4
Total Light Railways - -	1,421,000	36,500	1,457,500	111,730	—	1,074,349	—	—
Grand Total, Ireland - -	30,673,961	13,065,532	43,739,493	16,221,331 —	— —	3,018,025 *141,854*	— —	— —

31st December 1893.—IRELAND—*continued.*

which the Capitals of the Companies have been nominally increased. *See* note, page 1.

SHARE CAPITAL.				CAPITAL RAISED BY LOANS AND DEBENTURE STOCK.					TOTAL CAPITAL paid up and raised by Loans and Debenture Stock.	SUBSCRIPTIONS TO OTHER COMPANIES.	REMARKS.
Preferential.			Total Paid-up Stock and Share Capital.	Loans.		Debenture Stock.		Total raised by Loans and Debenture Stock.			
Amount.	Preferential Rate of Dividend.	Rate of Dividend paid.		Amount.	Rate of Interest.	Amount.	Rate of Interest.				
	Per cent.	Per cent.	£	£	Per cent.	£	Per cent.	£	£	£	
	—	—	92,210	—	—	—	—	—	92,210	—	Line in course of construction.
—	—	—	15,000	—	—	—	—	—	15,000	—	
—	—	—	25,000	—	—	—	—	—	25,000	—	
—	—	—	7,230	—	—	—	—	—	7,230	—	
—	—	—	200,200	—	—	—	—	—	200,200	—	As at 1st November 1893.
—	—	—	121,580	—	—	—	—	—	121,580	—	As at 30th September 1893.
—	—	—	75,000	—	—	—	—	—	75,000	—	
—	—	—	30,689	—	—	—	—	—	30,689	—	
—	—	—	—	—	—	—	—	—	—	—	
—	—	—	60,000	—	—	—	—	—	60,000	—	Worked by the Great Southern and Western.
—	—	—	57,000	—	—	—	—	—	57,000	—	
—	—	—	—	—	—	—	—	—	—	—	
—	—	—	137,170	—	—	—	—	—	137,170	—	As at 31st October 1893.
—	—	—	35,000	—	—	—	—	—	35,000	—	
—	—	—	150,000	—	—	—	—	—	150,000	—	As at 30th November 1893.
—	—	—	180,000	—	—	—	—	—	180,000	—	As at 31st October 1893.
—	—	—	1,186,079	—	—	—	—	—	1,186,079	—	TOTAL LIGHT RAILWAYS.
8,166,398	—	—	27,405,754	991,459	—	10,361,362	—	11,352,821	38,758,575	285,696	GRAND TOTAL, IRELAND.
61,885	—	—	*203,739*	—	—	*120,300*	—	*120,300*	*324,039*	—	

Table No. 1a.

RAILWAYS AUTHORISED UNDER THE LIGHT RAILWAYS (IRELAND) ACT, 1889, THE RAILWAYS (IRELAND) ACT, 1890, AND THE TRANSFER OF RAILWAYS (IRELAND) ACT, 1890.

Amount to be Contributed from Public Funds towards the Construction of Railways authorised under the Light Railways (Ireland) Act, 1889, the Railways (Ireland) Act, 1890, and the Transfer of Railways (Ireland) Act, 1890.

Name of Railway.	Length of Line.	Amount to be Contributed from Public Funds.	Working Railway Company.
	Miles.	£	
Achill Extension	8¼	59,000*	Midland Great Western of Ireland.
Ballina and Killala	8	44,000	Midland Great Western of Ireland.
Baltimore and Skibbereen	7¾	56,700	Cork, Bandon, and South Coast.
Bantry Bay Extension	1¾	15,000	Cork, Bandon, and South Coast.
Collooney and Claremorris	47	150,000	Waterford and Limerick.
Donegal and Killybegs	18¾	115,600	Donegal.
Downpatrick, Killough, and Ardglass	8	30,000	Belfast and County Down.
Galway and Clifden	48¼	264,600	Midland Great Western of Ireland.
Headford and Kenmare	19¾	50,000	Great Southern and Western of Ireland.
Killorglin and Valentia	26¾	85,000	Great Southern and Western of Ireland.
Stranorlar and Glenties	24½	116,000	Donegal.
Westport and Mallaranny	18	131,400	Midland Great Western of Ireland.
Total	—	1,117,300	

Note.—The above particulars were extracted from the Sixty-first Annual Report of the Commissioners of Public Works, Ireland.
* Probable Grant.

RAILWAY RETURNS.—1893.

No. 2.—TRAFFIC, &c.

RETURN showing the NUMBER of PASSENGERS and QUANTITY of GOODS conveyed and the RECEIPTS therefrom, upon the RAILWAYS in ENGLAND and WALES, SCOTLAND, and IRELAND, during the Year 1893.

No. 2.—Traffic, &c., ENGLAND

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.			Passenger Traffic. Number of Passengers conveyed (exclusive of Season and Periodical Tickets).				Passenger Traffic.	Goods Traffic.		Number of Miles travelled by Trains.		
	Double or more.	Single.	Total.	1st Class.	2d Class.	3d Class (including Parliamentary).	Total.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	Total.
									Tons.	Tons.			
Abbotsbury	*Worked by the Great Western.*												
Aberdare	*Leased to the Taff Vale.*												
Abingdon	*Leased to the Great Western.*												
Alexandra (Newport and South Wales) Docks and Railway.	3	- -	3	- -	- -	- -	- -	- -	2,529,987	218,352	- -	50,134	50,134
Bala and Festiniog	*Worked by the Great Western.*												
Banbury and Cheltenham Direct	*Worked by the Great Western.*												
Barnoldswick	*Worked by the Midland.*												
Barry	27	2	29	10,303	74,833	1,111,343	1,196,479	112*	4,293,378	151,757	76,707	542,746	619,453
Birkenhead	*Vested jointly in the Great Western and London and North-Western.*												
Bishop's Castle	- -	10	10	593	3,932	26,857	31,382	- -	5,974	3,916	Mixed		17,132
Brading Harbour Improvement and Railway	*Worked by the Isle of Wight.*												
Brecon and Merthyr Tydfil Junction	14	45	59	5,468	10,361	593,918	609,747	73	1,494,531	124,090	169,391	204,025	373,416
Bridgwater	*See under Somerset and Dorset.*												
Bridport	*Leased to the Great Western.*												
Brighton and Dyke	*Worked by the London, Brighton, and South Coast.*												
Buckfastleigh, Totnes, and South Devon	*Worked by the Great Western.*												
Buckley	*Worked by the Wrexham, Mold, and Connah's Quay.*												
Burry Port and Gwendreath Valley	- -	19	19	- -	- -	- -	- -	- -	239,017	- -	- -	12,433	12,433
Cambrian (Including the Mid Wales and the Llanybodwell Branch of the Shropshire.)	9	223	232	45,586	18,028	1,813,716	1,877,330	274	312,349	151,234	736,874	466,224	1,203,098
Cannock Chase and Wolverhampton	- -	6	6	- -	- -	- -	- -	- -	290,193	- -	- -	- -	- -
Charnwood Forest	*Worked by the London and North-Western.*												
Cheshire Lines Committee (Including Southport and Cheshire Lines Extension.)	119	18	137	569,643	937	8,756,790	9,327,370	10,409*	1,014,966	2,453,394	2,385,775	1,546,395	3,932,170
City and South London	3	- -	3	- -	- -	6,240,007‡	6,240,007	348	- -	- -	441,765	- -	441,765
Cleator and Workington Junction	12	17	29	877	4,179	102,884	107,940	29	1,142,235	22,187	29,619	124,396	154,015
Cockermouth, Keswick, and Penrith	- -	32	32	8,068	9,098	321,635	338,801	3,505	174,564	114,579	115,998	116,535	232,533
Colchester, Stour Valley, Sudbury, and Halstead	*Leased to the Great Eastern.*												
Colne Valley and Halstead	- -	19	19	4,287	- -	172,348	176,635	53	32,436	33,023	Mixed.		71,114
Cornwall Minerals	*Worked by the Great Western.*												
Cornwall Minerals, Goonbarrow Branch† (The main line of the Company is worked by the Great Western Company.)	- -	4	4	- -	- -	- -	- -	- -	5,769	- -	- -	2,220	2,220
Corris	- -	11	11	2,408	- -	62,906	65,314	2,165	17,608	2,636	13,403	10,877	24,280
Corwen and Bala	*Leased to the Great Western.*												
Cowbridge and Aberthaw	*Worked by the Taff Vale.*												
Cranbrook and Paddock Wood (Light)	*Worked by the South-Eastern.*												
Devon and Somerset	*Worked by the Great Western.*												
Didcot, Newbury, and Southampton	*Worked by the Great Western and London and South-Western.*												
Dover and Deal Committee	9	- -	9	7,238	14,741	297,423	319,402	42	12,727		87,434	5,774	93,208
Dowlais (Including the "Dowlais Extension.")	2	- -	2	No public traffic.									

* Equivalent number of annual tickets.
‡ Only one class of ticket issued.
† Line opened for traffic in October 1893.
§ Including receipts from the carriage of minerals.

AND WALES, in 1893.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.					EXCESS LUGGAGE, PARCELS, CARRIAGES, HORSES, DOGS, &c.	MAILS.	TOTAL RECEIPTS FROM PASSENGER TRAFFIC.	MERCHANDISE.	LIVE STOCK.	MINERALS.	TOTAL RECEIPTS FROM GOODS TRAFFIC.			
1st CLASS.	2d CLASS.	3d CLASS (including Parliamentary).	HOLDERS OF SEASON OR PERIODICAL TICKETS.	TOTAL FROM PASSENGERS.										
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
														Abbotsbury.
														Aberdare.
														Abingdon.
-	-	-	-	-	-	-	-	2,523	-	13,903	16,426	126,008	142,434	Alexandra (Newport and South Wales) Docks and Railway
														Bala and Festiniog.
														Banbury and Cheltenham Direct.
														Barnoldswick.
254	1,384	14,023	531	16,192	910	110	17,212	9,391	17	121,923	131,331	169,599	318,142	Barry.
														Birkenhead.
50	233	1,038	-	1,321	274	12	1,607	1,048	132	575	1,755	109	3,471	Bishop's Castle.
														Brading Harbour Improvement and Railway.
489	532	17,309	149	18,479	1,790	-	20,269	15,477	1,293	35,646	52,416	6,252	78,937	Brecon and Merthyr Tydfil Junction.
														Bridgwater.
														Bridport.
														Brighton and Dyke.
														Buckfastleigh, Totnes, and South Devon.
														Buckley.
-	-	-	-	-	-	-	-	-	-	7,879	7,879	4,465	12,344	Burry Port and Gwendreath Valley.
6,226	1,313	96,613	1,475	105,627	16,787	16,950	139,364	63,074	11,244	33,232	107,550	6,876	253,790	Cambrian.
-	-	-	-	-	-	-	-	-	-	1,825	1,825	1,020	2,845	Cannock Chase and Wolverhampton.
														Charnwood Forest.
26,239	30	242,377	38,088	306,734	43,764	963	351,461	383,829	7,353	41,129	432,811	22,012	806,284	Cheshire Lines Committee.
-	-	43,117‡	1,409	44,526	44	-	44,570	-	-	-	-	1,410	45,980	City and South London.
32	82	1,508	78	1,700	81	-	1,781	4,848	7	37,123	41,978	619	44,378	Cleator and Workington Junction.
1,005	707	12,966	676	15,354	1,490	230	17,074	11,745	527	14,113	26,385	565	44,024	Cockermouth, Keswick, and Penrith.
														Colchester, Stour Valley, Sudbury and Halstead.
238	-	3,345	71	3,654	660	50	4,364	4,985	292	2,133	7,410	1,031	12,805	Colne Valley and Halstead.
														Cornwall Minerals.
-	-	-	-	-	-	-	-	-	-	268	268	1	269	Cornwall Minerals, Goonbarrow Branch.†
84	-	949	123	1,156	80	50	1,286	377	-	2,020	2,397	221	3,904	Corris.
														Corwen and Bala.
														Cowbridge and Aberthaw.
														Cranbrook and Paddock Wood (Light).
														Devon and Somerset.
														Didcot, Newbury, and Southampton.
324	450	6,140	122	7,036	192	-	7,228	710§	39	-	749	591	8,568	Dover and Deal Committee.
														Dowlais.

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC.					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
				NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).									
	Double or more.	Single.	Total.	1st Class.	2d Class.	3d Class (including Parliamentary).	Total.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	Total.
									Tons.	*Tons.*			
Downham and Stoke Ferry	*Leased to the Great Eastern.*												
Easingwold	-	2	2	827	-	42,277	43,104	32	5,829	6,688	Mixed.		13,319
East and West Junction	*Worked by the "East and West Junction" and "Stratford-upon-Avon, Towcester, and Midland Junction"*												
East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction Joint Committee (Including the "Evesham, Redditch, and Stratford-upon-Avon Junction.")	-	52	52	2,870	2,862	149,029	154,761	32	27,352	125,895	127,843	133,289	261,132
East and West Yorkshire Union	-	3	3	-	-	-	-	-	198,652	9,276	-	4,770	4,770
East Cornwall Mineral (Calstock to Callington)*	-	7	7	-	-	-	-	-	17,755	6,493	-	9,088	9,088
East Lincolnshire	*Leased to the Great Northern.*												
East London (Joint Committee)	6	1	7	55,942	515,934	6,185,476	6,757,352	215	12,937	58,639	300,268	12,169	312,437
Ely and Newmarket	*Leased to the Great Eastern.*												
Ely and St. Ives	*Worked by the Great Eastern.*												
Ely Valley	*Worked by the Great Western.*												
Evesham, Redditch, and Stratford-upon-Avon Junction.	*Worked by the East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction Joint Committee*												
Exmouth Docks and Railway†	-	-	-	-	-	-	-	-	-	-	-	-	-
Felixstowe Dock and Railway‡	-	-	-	-	-	-	-	-	-	-	-	-	-
Festiniog	2	12	14	3,625	3,427	143,608	150,660	261	116,416	15,254	48,550	51,434	99,984
Forcett	-	5	5	-	-	-	-	-	111,369	3,210	-	4,470	4,470
Forest of Dean Central	*Worked by the Great Western.*												
Freshwater, Yarmouth, and Newport	*Worked by the Isle of Wight Central.*												
Furness (Including half the "Whitehaven, Cleator, and Egremont Joint Line.")	85	49	134	36,764	67,901	1,929,534	2,034,199	639	3,405,296	539,168	632,468	631,623	1,264,091
Garstang and Knot End	-	7	7	607	-	37,586	38,193	-	14,196	14,816	Mixed.		18,732
Glyn Valley Tramway	-	9	9	87	-	20,820	20,907	3	43,762	1,370	Mixed.		27,432
Golden Valley	-	19	19	1,360	-	43,531	44,891	-	3,760	4,361	24,635	11,704	36,339
Gorsedda Junction and Portmadoc	-	11	11	-	-	-	-	-	-	-	-	-	-
Great Eastern (Including the "Colchester, Stour Valley, Sudbury, and Halstead," "Downham and Stoke Ferry," "Ely and Newmarket," "Ely and St. Ives," "London and Blackwall," "Mellis and Eye," "Northern and Eastern," "Ramsey and Somersham Junction," "Thetford and Watton," "Watton and Swaffham," and the "Wivenhoe and Brightlingsea," to 30th June††, half the "Great Northern and Great Eastern Joint Line," and part of the "Tottenham and Hampstead Junction.")	601	503	1,104	1,782,239	4,872,325	80,734,823	87,389,387	29,811	2,808,979	5,198,281	11,261,629	6,271,984	17,533,613
Great Marlow	-	3	3	7,239	16,978	129,274	153,491	64	9,585	9,663	20,000	3,728	32,728
Great Northern (Including the "East Lincolnshire," "Holme and Ramsey," "Horncastle," "Louth and East Coast," "Nottingham and Grantham," "Nottingham Suburban," "Royston and Hitchin," "Stamford and Essendine," "Sutton and Willoughby," "Wainfleet and Firsby," and "Skegness Extension," and part of the "Great Northern and Great Eastern," "Halifax and Ovenden," and "West Riding and Grimsby" joint lines.)	640	197	837	809,280	1,186,882	30,815,366	32,811,528	100,992§	5,288,856	5,564,571	9,960,111	8,523,176	18,483,287
Great North of England, Clarence, and Hartlepool Junction.	*Leased to the North-Eastern.*												
Great Western (Including the "Abbotsbury," "Abingdon," "Alcester Joint Line," "Bala and Festiniog," "Banbury and Cheltenham Direct," "Bridport," "Buckfastleigh, Totnes, and South Devon," "Cornwall Minerals," "Corwen and Bala," "Devon and Somerset," "Didcot, Newbury, and Southampton, except Shawford Junction line," "Ely Valley," "Forest of Dean Central," "Helston," "Kington and Eardisley," "Leominster and Kington," "Llangollen and Corwen," "Marlborough," "Milford," "Minehead," "Much Wenlock and Severn Junction," "Nantwich and Market Drayton," "Oldbury," "Princetown," "Ross and Monmouth," "Staines and West Drayton," "Teign Valley," "Tiverton and North Devon," "Vale of Llangollen," "Wenlock," and "Wenlock Extensions," "West Cornwall Railway," "West Somerset," and "Wye Valley," and, jointly with other Companies, the "Birkenhead," "Clifton Extension," "Halesowen," "Hammersmith and City," "Shrewsbury and Hereford," "Shrewsbury and Wellington," "Shrewsbury and Welshpool," "Tenbury," "Vale of Towy," "Victoria Station and Pimlico," "West London," "Weymouth and Portland," and "Wrexham and Minera Extension.")	1,171	1,311	2,482	1,315,569	4,479,865	55,372,151	61,167,585	37,926	19,882,713	5,821,245	18,817,118	17,922,532	36,739,650

* The line was worked by the Plymouth, Devonport, and South-Western Junction Railway Company.
† The Railway is merely a branch line from the Docks to the London and South-Western Railway.
‡ The Railway is merely a branch line from the Docks to the Great Eastern Railway.
†† Sold to the Great Eastern as from 1st July 1893.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.						NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.														
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.	Excess Luggage, Parcels, Carriages, Horses, Dogs, &c.	Mails.	TOTAL Receipts from Passenger Traffic.	Merchandise.	Live Stock.	Minerals.	TOTAL Receipts from Goods Traffic.	MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
														Downham and Stoke Ferry.
21	-	508	15	544	94	25	663	499	18	194	711	35	1,409	Easingwold.
t Committee.														*East and West Junction.*
480	224	4,757	45	5,506	1,013	25	6,544	18,068	578	1,799	20,445	136	27,125	East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction Joint Committee.
-	- -	- -	- -	- -	- -	- -	- -	701	- -	5,003	5,704	2	5,706	East and West Yorkshire Union.
-	- -	- -	- -	- -	- -	- -	- -	713	- -	1,318	2,031	174	2,205	East Cornwall Mineral (Calstock to Callington).*
														East Lincolnshire.
822	4,624	37,443	724	43,613	743	- -	44,356	3,149	299	431	3,879	2,142	50,377	East London (Joint Committee).
														Ely and Newmarket.
														Ely and St. Ives.
														Ely Valley.
														Evesham, Redditch, and Stratford upon-Avon Junction.
-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	Exmouth Docks and Railway.†
-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	Felixstowe Dock and Railway.‡
363	269	4,305	1,432	6,369	- -	30	6,399	1,848	- -	9,215	11,063	337	17,799	Festiniog.
-	- -	- -	- -	- -	- -	- -	- -	183	- -	2,832	3,015	25	3,040	Forcett.
														Forest of Dean Central.
														Freshwater, Yarmouth, and Newport.
4,294	3,824	69,743	3,616	81,477	11,693	3,252	96,422	82,307	4,012	217,502	303,821	37,989	438,232	Furness.
22	- -	781	- -	803	128	10	941	1,586	- -	541	2,127	296	3,364	Garstang and Knot End.
5	- -	475	20	500	- -	- -	500	370	- -	2,895	3,265	31	3,796	Glyn Valley Tramway.
63	- -	1,138	- -	1,201	155	- -	1,356	522	8	230	760	- -	2,116	Golden Valley.
-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	Gorsedda Junction and Portmadoc.
2,857	96,248	1,554,781	227,899	2,031,785	208,340	30,201	2,270,326	1,161,115	84,031	385,983	1,631,129	369,269	4,270,724	Great Eastern.
223	296	1,447	65	2,031	218	37	2,286	937	27	489	1,453	190	3,929	Great Marlow.
4,349	23,779	1,115,204	145,480‖	1,448,812	257,988	32,360	1,739,160	1,438,305	53,831	698,060	2,190,196	66,078	3,995,434	Great Northern.
														Great North of England, Clarence and Hartlepool Junction.
9,406	201,980	2,718,825	118,156	3,378,367	598,014	125,598	4,101,979	2,257,242	150,286	2,096,210	4,503,738	208,507	8,814,224	Great Western.

§ Including 69,362 workmen's weekly tickets.
‖ Including amount received for workmen's weekly tickets, estimated at 4,190*l.*

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC. NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
	Double or more.	Single.	TOTAL.	1st Class.	2d Class.	3d Class (including Parliamentary).	TOTAL.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	TOTAL.
									Tons.	*Tons.*			
Gwendraeth Valleys	- -	3	3	- -	- -	- -	- -	- -	62,319	3,945	- -	4,911	4,911
Halesowen	*Worked by the Great Western and Midland Companies.*												
Halifax and Ovenden	*Included in the returns of the "Great Northern" and "Lancashire and Yorkshire."*												
Halifax High Level	*See* note, page iii.												
Hammersmith and City Junction	*Worked jointly by the Great Western and Metropolitan.*												
Harborne	*Worked by the London and North-Western.*												
Harrow and Stanmore	*Worked by the London and North-Western.*												
Hayling Railways	*Leased to the London, Brighton, and South Coast.*												
Helston	*Worked by the Great Western.*												
Horncastle	*Worked by the Great Northern.*												
Hounslow and Metropolitan	*Worked by the Metropolitan District.*												
Hull, Barnsley, and West Riding Junction Railway and Dock.	65	1	66	4,209	- -	380,323	384,532	264	516,362	394,569	359,474	682,950	1,042,424
Isle of Wight (Including "Brading Harbour.")	1	13	14	48,992	233,923	360,799	743,714	107*	47,233	28,248	115,018	13,500	128,518
Isle of Wight Central (Including the "Freshwater, Yarmouth, and Newport.")	- -	34	34	33,965	226,332	407,132	667,929	3,487	85,108	28,141	182,946	25,340	208,286
Kettering, Thrapstone, and Huntingdon	*Worked by the Midland.*												
King's Lynn Docks and Railway†	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Kington and Eardisley	*Worked by the Great Western.*												
Lancashire and Yorkshire (Including part of the "Halifax and Ovenden," "North Union," "Preston and Longridge," and "Preston and Wyre" Joint Lines.)	502	21	523	992,182	1,639,798	44,279,352	46,911,332	28,861*	11,017,649	5,441,292	9,879,017	6,025,374	15,904,391
Leominster and Kington	*Worked by the Great Western.*												
Liskeard and Caradon (Including the "Liskeard and Looe Union Railway and Canal.")	- -	22	22	180	1,264	23,345	24,789	- -	16,243	2,590	9,501	5,296	14,797
Liskeard and Looe Union Railway and Canal	*Worked by the Liskeard and Caradon.*												
Liverpool Overhead‡	5	- -	5	495,708	3,350,673	- -	3,846,381	- -	- -	- -	352,389	- -	352,389
Liverpool, Southport, and Preston Junction	*Worked by the West Lancashire.*												
Llanelly and Mynydd Mawr, for the year ended 31st October 1893.	- -	12	12	- -	- -	- -	- -	- -	36,763	4,246	- -	11,368	11,368
Llangollen and Corwen	*Leased to the Great Western.*												
London and Blackwall	*Leased to the Great Eastern.*												
London and Greenwich	*Leased to the South-Eastern.*												
London and North-Western (Including the "Charnwood Forest," "Cleator and Furness" Joint Line, "Harborne," "Harrow and Stanmore," "Mold and Denbigh Junction," and "Shropshire Union," and half of the "Ashby and Nuneaton," "Birkenhead and Branches," "Shrewsbury and Hereford," "Shrewsbury and Wellington," "Shrewsbury and Welshpool," and "Tenbury," and part of the "North Union," "Preston and Wyre," "West London," "West London Extension," and "Whitehaven, Cleator, and Egremont.")	1,506	385	1,891	1,885,405	2,927,902	60,677,129	65,490,436	227,998§	25,407,751	7,958,230	21,822,937	19,309,051	41,131,988
London and South-Western (Including the "North Cornwall," "Plymouth, Devonport, and South-Western Junction," Plymstock Extension of the "Plymouth and Dartmoor," "Salisbury Railway and Market House," "Sidmouth," "Shawford Junction Line" (part of the Didcot, Newbury, and Southampton Railway), "Stonehouse Pool Improvement and Railway," and half of the "Weymouth and Portland," and part of the "West London Extension.")	633	230	863	2,121,788	3,773,969	41,846,896	47,742,653	119,448**	2,254,766	1,863,057	9,956,343	3,733,974	13,690,317
London, Brighton, and South Coast (Including the "Brighton and Dyke," "Hayling Railways," and part of the "Croydon and Oxted," "Victoria Station and Pimlico," "West London Extension," and "Woodside and South Croydon.")	319	120	439	1,699,870	3,112,695	42,160,370	46,972,935	23,323	1,834,749	1,048,771	7,689,187	1,592,923	9,282,110
London, Chatham, and Dover (Including the "Mid Kent (Bromley to St. Mary Cray)," "Shortlands and Nunhead," and part of the "Victoria Station and Pimlico.")	178	10	188	1,592,697	2,692,499	25,984,172	30,269,368	14,692§§	1,554,475	521,614	3,739,644	599,666	4,339,310
Londonderry (Seaham to Sunderland) (Private Property.)	6	1	7	7,693	7,327	398,937	413,957	64*	796,588	29,021	39,612	155,685	195,297
London, Tilbury, and Southend	66	13	79	211,132	64,219	8,433,371	8,708,722	2,008	210,490	236,797	891,509	184,220	1,075,729
Longton, Adderley Green, and Bucknall	*Worked by the North Staffordshire.*												

* Equivalent number of annual tickets. ‡ Line opened for traffic on 6th March 1893. § Including 158,645 workmen's weekly tickets.
¶ Including 12,208*l.* received for workmen's weekly tickets. ** Including 75,797 workmen's weekly tickets.
†† Including 9,984*l.* received for workmen's weekly tickets. §§ Equivalent number of annual tickets. The number of workmen's weekly tickets issued was 3,33
¶¶ The Company ceased to issue second-class tickets from 31st March 1893.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.						NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.					Excess Luggage, Parcels, Carriages, Horses, Dogs, &c.	Mails.	Total Receipts from Passenger Traffic.	Merchandise.	Live Stock.	Minerals.	Total Receipts from Goods Traffic.	Miscellaneous, Rents, Tolls, Navigation, Steamboats, &c.	Total Receipts from all Sources of Traffic.	
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	Total from Passengers.										
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
- -	- -	- -	- -	- -	- -	- -	- -	78	- -	1,356	1,434	51	1,485	Gwendraeth Valleys.
														Halesowen.
														Halifax and Ovenden.
														Halifax High Level.
														Hammersmith and City Junction.
														Harborne.
														Harrow and Stanmore.
														Hayling Railways.
														Helston.
														Horncastle.
														Hounslow and Metropolitan.
392	- -	13,408	506	14,306	11,996	- -	26,302	97,612	814	52,983	151,409	86,055	263,766	Hull, Barnsley, and West Riding Junction Railway and Dock.
2,863	11,571	9,919	578	24,931	2,266	445	27,642	3,175	- -	2,124	5,299	4,900	37,841	Isle of Wight.
2,035	9,301	10,093	1,307	22,736	1,650	134	24,520	3,138	- -	3,881	7,019	2,733	34,272	Isle of Wight Central.
														Kettering, Thrapstone, and Huntingdon.
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	36,065	36,065	King's Lynn Docks and Railway.†
														Kington and Eardisley.
6,467	57,079	1,305,836	220,413	1,649,795	179,291	16,799	1,845,885	1,601,363	40,877	829,392	2,471,632	98,834	4,416,351	Lancashire and Yorkshire.
														Leominster and Kington.
10	38	503	- -	551	- -	- -	551	551	- -	2,488	3,039	121	3,711	Liskeard and Caradon.
														Liskeard and Looe Union Railway and Canal.
6,233	23,852	- -	- -	30,085	4	- -	30,089	- -	- -	- -	- -	605	30,694	Liverpool Overhead.‡
														Liverpool, Southport, and Preston Junction.
- -	- -	- -	- -	- -	- -	- -	- -	779	- -	2,064	2,843	- -	2,843	Llanelly and Mynydd Mawr.
														Llangollen and Corwen.
														London and Blackwall.
														London and Greenwich.
8,469	257,782	2,813,434	238,334 ¶	3,808,019	789,666	188,508	4,786,193	3,863,265	198,506	2,194,934	6,256,705	192,962	11,235,860	London and North-Western.
2,983	208,970	1,440,053	187,074 ††	2,089,080	264,547	30,405	2,384,032	751,705	39,466	246,011	1,037,182	362,322	3,783,536	London and South-Western.
4,651	163,573	1,108,659	225,006	1,701,889	149,267	12,396	1,863,552	375,549	11,907	210,969	598,425	174,708	2,636,685	London, Brighton, and South Coast.
2,723	126,773	518,669	102,323 ‡‡	900,488	94,654	2,575	997,717	166,834	5,972	92,421	265,227	176,301	1,439,245	London, Chatham, and Dover.
201	115	4,345	196	4,857	391	85	5,333	1,973	36	17,010	19,019	10,725	35,077	Londonderry (Seaham to Sunderland).
1,925	1,487 ¶¶	121,935	16,077	151,174	8,770	266	160,210	55,767	351	12,586	68,704	33,396	262,310	London, Tilbury, and Southend.
														Longton, Adderley Green, and Bucknall.

† The short tramway belonging to the Company is used only for the transit of goods between the Great Eastern Railway and the Docks.
¶ The receipts from the steamboat traffic are included with those from the railroad traffic, and not with the miscellaneous receipts. The Company state that no separate accounts of steamboat receipts are kept, and also that they cannot comply with the requirements of the Regulation of Railways Act of 1871.
‡‡ Including 417*l.* received for workmen's weekly tickets.

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC. NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
	Double or more.	Single.	Total.	1st Class.	2d Class.	3d Class (including Parliamentary).	Total.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	Total.
									Tons.	*Tons.*			
Louth and East Coast	*Leased to the Great Northern.*												
Lydd	*Worked by the South-Eastern.*												
Macclesfield Committee	11	- -	11	3,138	- -	441,952	445,090	1,527	368,690	95,901	64,455	78,428	142,
Maenclochog	*See* note, page iii.												
Manchester and Milford	- -	41	41	1,297	3,770	176,097	181,164	5	29,616	22,694	Mixed.		118,
Manchester, Sheffield, and Lincolnshire (Including the "Wigan Junction" and part of the "West Riding and Grimsby.")	353	29	382	284,815	- -	13,194,820	13,479,635	93,762	6,572,430	4,856,254	3,286,511	5,120,030	8,406,
Manchester, South Junction, and Altrincham	9	- - -	9	198,633	247,518	3,528,233	3,974,384	4,916*	1,317,596	634,678	231,792	7,179	238,
Marlborough	*Worked by the Great Western.*												
Maryport and Carlisle	28	13	41	10,186	15,774	555,849	581,809	3,454	722,716	160,433	194,076	245,039	439,
Mawddwy	- -	7	7	196	195	24,730	25,121	1	2,917	1,943	Mixed.		17,
Mellis and Eye	*Worked by the Great Eastern.*												
Merrybent and Darlington	- -	6	6	- -	- -	- -	- -	- -	8,590	5,841	- -	5,594	5,
Mersey	4	- -	4	454,667	1,697,208	5,363,913	7,515,788	4,596	- -	- -	290,981	- -	290,
Methley Joint Railway	6	- -	6	2,799	- -	327,667	330,466	67	331,435	207,381	- -	- -	-
Metropolitan (Including half the "Hammersmith and City.")	51	16	67	2,689,031	8,162,892	61,329,991	72,181,914	31,721	1,007,894	650,772	2,085,850	56,459	2,142,
Metropolitan District (Including the "Richmond," "Ealing," and "Fulham" Extensions, and "Hounslow and Metropolitan.")	18	1	19	2,749,909	6,185,655	29,644,104	38,579,668	26,873	180,399	3,145	1,340,073	11,270	1,351,
Metropolitan and Metropolitan District City Lines and Extensions.	2	- -	2	20,254	122,713	1,340,858	1,483,825	21	- -	- -	216,015	- -	216,
Mid Kent (Bromley to St. Mary Cray)	*Leased to the London, Chatham, and Dover.*												
Midland (Including the "Barnoldswick," "Kettering, Thrapstone, and Huntingdon," "Manchester, Buxton, Matlock, and Midland Junction," the "Furness and Midland" Joint Line, and half the "Ashby and Nuneaton," "Clifton Extension," the "Great Western and Midland" from Malvern Wells to Malvern Link, "Midland and North-Eastern Committee." "Otley and Ilkley," "Tottenham and Hampstead Junction," and part of the "Hales owen.")	1,048	338	1,386	1,179,966	- -	38,195,024	39,374,990	28,953	15,192,935	11,583,173	16,039,875	21,995,880	38,035,
Midland and Great Northern Railways Joint Committee (Eastern Section).¶	6	104	110	17,126	- -	701,593	718,719	130	99,299	155,524	406,551	285,280	691,
Midland and North-Eastern Committee (Swinton to Knottingley.)	*Included in the returns of the Midland and North-Eastern Companies.*												
Midland and South-Western Junction	- -	55	55	3,296	5,929	265,449	274,674	220	45,185	44,400	162,645	149,475	384,20
Mid Wales	*Worked by the Cambrian.*												
Milford	*Worked by the Great Western.*												
Milford Haven Dock and Railway	- -	1	1	- -	- -	- -	- -	- -	6,735	3,022	- -	- -	-
Minehead	*Worked by the Great Western.*												
Mold and Denbigh Junction	*Worked by the London and North-Western.*												
Much Wenlock and Severn Junction	*Worked by the Great Western.*												
Muswell Hill and Palace Railway	Line closed for traffic.												
Nantwich and Market Drayton	*Worked by the Great Western.*												
Neath and Brecon	- -	40	40	2,171	480	210,791	213,442	80	359,809	77,737	29,388	40,364	69,7
Northampton and Banbury Junction	- -	15	15	1,965	4,655	99,388	106,008	25	34,334	61,317	39,176	16,361	59,8
North and South Western Junction	4	1	5	3,252	30,755	483,071	517,078	34	10	12	- -	- -	-
North Cornwall	*Worked by the London and South-Western.*												
North-Eastern (Including the "Great North of England, Clarence, and Hartlepool Junction," "Scarborough and Whitby," "Scarborough, Bridlington, and West Riding Junction," half the "Midland and North-Eastern Committee," and part of the "Otley and Ilkley" Joint Line.)	1,086	529	1,615	894,522	278,391	40,445,201	41,618,114	14,957	31,800,920	9,044,138	12,298,942	15,549,904	27,848,
Northern and Eastern	*Leased to the Great Eastern.*												
North London	12	- -	12	676,444	5,372,927	23,209,004	29,258,375	555,714**	861,137	1,471,270	1,851,382	273,357	2,124,
North Staffordshire (Including the "Longton, Adderley Green, and Bucknall.")	154	39	193	128,311	340,286	6,550,023	7,018,620	3,338‡‡	3,498,845	1,154,343	1,127,775	1,017,232	2,145,
North Wales (Narrow Gauge)	- -	12	12	643	415	54,162	55,220	328	17,055	756	Mixed.		31,
Nottingham and Grantham Railway and Canal	*Leased to the Great Northern.*												
Nottingham Suburban	*Worked by the Great Northern.*												
Oldbury	*Worked by the Great Western.*												
Oldham, Ashton-under-Lyne, and Guide Bridge Junction.	6	- -	6	16,520	8,171	1,249,797	1,274,488	18,449	241,381	131,597	147,848	26,776	174,

* Equivalent number of annual tickets.
† The Company received in addition 78,255*l.* net from the rents of houses, &c.
‡ Including 11,044*l.* net from rents of property.
‖ Including 4,342 miles run by mixed trains.
‡‡ Equivalent number of annual tickets. The number of workmen's weekly tickets issued was 93,387.
¶ The line was purchased by the Midland and Great Northern Companies from the Eastern and Midlands Company, which worked the line for the first six months of 18

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.						NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.					Excess Luggage, Parcels, Carriages, Horses, Dogs, &c.	Mails.	TOTAL Receipts from Passenger Traffic.	Merchandise.	Live Stock.	Minerals.	TOTAL Receipts from Goods Traffic.	MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.										
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
														Louth and East Coast.
														Lydd.
102	-	-	6,311	425	6,838	1,004	7	7,849	8,270	89	11,334	19,693	230	27,772	Macclesfield Committee.
														Maenclochog.
249	452		8,992	52	9,745	744	350	10,839	5,455	875	2,849	9,179	313	20,331	Manchester and Milford.
686	-	-	418,361	31,373	476,420	133,380	5,772	615,572	793,867	20,418	468,105	1,282,390	262,656	2,160,618	Manchester, Sheffield, and Lincolnshire.
568	5,049		46,787	28,712	86,116	5,328	200	91,644	13,658	937	12,546	27,141	3,921	122,706	Manchester, South Junction, and Altrincham.
														Marlborough.
219	1,116		24,013	1,809	28,177	3,910	1,053	33,140	19,060	2,592	46,766	68,418	1,964	103,522	Maryport and Carlisle.
16	9		563	5	593	50	69	712	235	1	221	457	45	1,214	Mawddwy.
														Mellis and Eye.
-	-	-	-	-	-	-	-	-	170	-	428	598	-	598	Merrybent and Darlington.
122	17,500		39,250	8,118	71,990	756	110	72,856	-	-	-	-	2,098	74,954	Mersey.
35	-	-	2,037	90	2,162	98	-	2,260	3,211	25	5,454	8,690	73	11,023	Methley Joint Railway.
260	102,456		425,297	66,425	647,438	7,292	-	654,730	24,429	744	18,103	43,276	39,781†	737,787†	Metropolitan.
043	75,454		235,484	43,703	404,684	1,479	-	406,163	95	-	2,612	2,707	26,135‡	435,005‡	Metropolitan District.
251	6,257		25,911	18	35,437	243	-	35,680	-	-	-	-	678§	36,358§	Metropolitan and Metropolitan District City Lines and Extensions.
															Mid Kent (Bromley to St. Mary Cray).
771	-	-	1,332,322	164,661	2,211,754	518,384	56,726	2,786,864	3,274,131	94,054	2,109,407	5,477,592	143,136	8,407,592	Midland.
798	-	-	25,977	909	28,684	4,720	200	33,604	35,892	5,924	11,778	53,594	1,137	88,335	Midland and Great Northern Railways Joint Committee (Eastern Section.)¶
															Midland and North-Eastern Committee.
478	551		10,875	86	11,990	4,227	-	16,217	9,674	1,111	3,773	14,558	462	31,237	Midland and South-Western Junction.
															Mid. Wales.
															Milford.
-	-	-	-	-	-	-	-	-	103	-	71	174	262	436	Milford Haven Dock and Railway.
															Minehead.
															Mold and Denbigh Junction.
															Much Wenlock and Severn Junction.
															Muswell Hill and Palace Railway.
															Nantwich and Market Drayton.
263	37		7,205	346	7,851	577	150	8,578	8,409	242	17,035	25,686	57	34,321	Neath and Brecon.
110	201		2,777	24	3,112	368	20	3,500	3,414	352	1,062	4,828	122	8,450	Northampton and Banbury Junction.
24	177		1,772	12	1,985	17	-	2,002	1	-	1	2	1,440	3,444	North and South Western Junction.
															North Cornwall.
281	12,085		1,552,661	122,803	1,824,830	309,699	60,079	2,194,608	2,166,000	102,665	2,484,778	4,753,443	247,332	7,195,383	North-Eastern.
															Northern and Eastern.
586	55,179		170,099	78,527 ††	315,582	5,967	-	321,349	105,751	1,468	37,431	144,650	33,337	499,336	North London.
915	10,461		152,494	15,564	189,434	34,731	3,000	227,165	217,790	3,980	244,125	465,895	81,911	774,971	North Staffordshire.
53	26		1,556	682	2,317	-	-	2,317	168	-	1,716	1,884	31	4,232	North Wales (Narrow Gauge).
															Nottingham and Grantham Railway and Canal.
															Nottingham Suburban.
															Oldbury.
313	66		12,069	2,201	14,649	552	50	15,251	6,682	82	5,263	12,027	822	28,100	Oldham, Ashton-under-Lyne, and Guide Bridge Junction.

§ The Committee also received 10,305*l.* net from rents.
§§ Including 72,083 miles run by mixed trains.
** Including 489,693 workmen's weekly tickets, estimated by the Company to represent 5,882,264 journeys.
†† Including 24,377*l.* received for workmen's weekly tickets.
¶¶ Including 7,651,951 miles run by mineral trains.

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC. NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
	Double or more.	Single.	TOTAL.	1st Class.	2d Class.	3d Class (including Parliamentary).	TOTAL.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	TOTAL.
									Tons.	*Tons.*			
Pembroke and Tenby	- -	29	29	4,238	34,065	284,975	323,278	33	52,896	24,344	92,289	50,127	142,4
Penarth Extension	*Leased to the Taff Vale.*												
Penarth Harbour, Dock, and Railway	*Leased to the Taff Vale.*												
Plymouth and Dartmoor¶	- -	11	11	- -	- -	- -	- -	- -	50,973	- -	- -	- -	-
Plymouth, Devonport, and South-Western Junction.	*Worked by the London and South-Western.*												
Pontypridd, Caerphilly, and Newport	*See* note, page iii.												
Portmadoc, Croesor, and Beddgelert	- -	5	5	- -	- -	- -	- -	- -	6,432	8,467	- -	2,844	2,8
Princetown	*Worked by the Great Western.*												
Ramsey and Somersham Junction	*Worked by the Great Eastern.*												
Ravenglass and Eskdale	- -	7	7	399	- -	27,850	28,249	46	803	760	14,186	- -	19,4
Redruth and Chasewater	- -	10	10	- -	- -	- -	- -	- -	26,934	5,609	- -	11,970	11,9
Rhondda and Swansea Bay	4	15	19	872	3,584	353,628	358,084	183†	289,192	91,758	56,897	42,022	98,9
Rhymney	38	8	46	9,852	37,867	1,255,156	1,302,875	256†	4,795,636	337,853	195,556	905,655	1,101,2
Ross and Monmouth	*Worked by the Great Western.*												
Rowrah and Kelton Fell Mineral	- -	3	3	- -	- -	- -	- -	- -	51,690	740	- -	4,500	4,5
Royston and Hitchin	*Leased to the Great Northern.*												
St. Austell and Pentewan Railway, Harbour, and Dock, for the year ended 29th September 1893.	- -	3	3	- -	- -	- -	- -	- -	37,474	- -	- -	6,160	6,1
Salisbury Railway and Market House	*Worked by the London and South-Western.*												
Saundersfoot Railway and Harbour	- -	4	4	- -	- -	- -	- -	- -	23,860	75	- -	3,000	3,0
Scarborough and Whitby	*Worked by the North-Eastern.*												
Scarborough, Bridlington, and West Riding Junction.	*Worked by the North-Eastern.*												
Severn and Wye and Severn Bridge	4	33	37	1,243	- -	123,113	124,356	54	480,313	57,640	64,449	62,095	126,5
Sheffield and Midland Committee	25	4	29	85,309	- -	3,644,717	3,730,026	34,301‡	1,948,276	1,534,589	402,067	368,911	770,9
Shortlands and Nunhead	*Worked by the London, Chatham, and Dover.*												
Shrewsbury and Hereford	*Leased to the Great Western and London and North-Western.*												
Shropshire Union Railways and Canal	*Leased to the London and North-Western.*												
Sidmouth	*Worked by the London and South-Western.*												
Snailbeach District	- -	3	3	- -	- -	- -	- -	- -	3,989	85	- -	3,196	3,1
Somerset and Dorset, for the year ended 31st October 1893. (Including the "Bridgwater." The lines are worked by a Joint Committee of the "Midland" and "London and South-Western Companies.")	34	67	101	16,960	11,762	1,061,807	1,090,529	247†	361,845	329,151	582,712	554,266	1,136,9
South-Eastern (including the "Cranbrook and Paddock Wood (Light)" "London and Greenwich," and "Lydd," and part of the "Croydon and Oxted" and "Woodside and South Croydon" joint lines.)	349	57	406	958,376	2,415,074	27,769,282	31,142,732	12,437	1,183,527	1,041,131	6,106,357	1,676,983	7,783,3
Southport and Cheshire Lines Extension	*Worked by the Cheshire Lines Committee.*												
South Wales Mineral, for the year ended 30th September 1893.	- -	13	13	- -	- -	- -	- -	- -	250,119	11,904	- -	87,724	87,7
Southwold	- -	9	9	3,457	- -	83,788	87,245	7	5,327	3,706	Mixed.		30,1
Staines and West Drayton	*Worked by the Great Western.*												
Stamford and Essendine	*Worked by the Great Northern.*												
Stocksbridge	- -	2	2	- -	- -	- -	- -	- -	57,487	25,232	- -	7,980	7,9
Stonehouse Pool Improvement and Railway	*Worked by the London and South-Western.*												
Sutton and Willoughby	*Worked by the Great Northern.*												
Swansea and Mumbles	- -	7	7	123,630	316,337	159,652	599,619	478	41,000	18,000	48,283	1,642	49,9
Taff Vale (Including the "Aberdare," "Cowbridge and Aberthaw," "Penarth Extension," "Penarth Harbour, Dock, and Railway.")	72	47	119	66,684	283,135	4,655,070	5,004,889	21,873	11,642,619	622,976	458,683	1,459,295	1,917,9
Talyllyn, for the year ended 30th September 1893	- -	7	7	- -	212	25,849	26,061	- -	7,678	390	Mixed.		11,8
Teign Valley	*Worked by the Great Western.*												

* Including 5,222 miles run by mixed trains. † Equivalent number of annual tickets. ‡ Including 31,362 workmen's weekly tickets.
¶ The return is exclusive of the Plymstock Extension, which line is worked by the "London and South Western" Company.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.					EXCESS LUGGAGE, PARCELS, CARRIAGES, HORSES, DOGS, &c.	MAILS.	TOTAL RECEIPTS FROM PASSENGER TRAFFIC.	MERCHANDISE.	LIVE STOCK.	MINERALS.	TOTAL RECEIPTS FROM GOODS TRAFFIC.			
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.										
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
509	1,817	11,109	160	13,595	2,088	568	16,251	5,774	437	4,580	10,791	601	27,643	Pembroke and Tenby.
														Penarth Extension.
														Penarth Harbour, Dock, and Railway.
-	- -	- -	- -	- -	- -	- -	- -	- -	- -	424	424	288	712	Plymouth and Dartmoor.¶
														Plymouth, Devonport, and South-Western Junction.
														Pontypridd, Caerphilly, and Newport.
-	- -	- -	- -	- -	- -	- -	- -	125	- -	321	446	- -	446	Portmadoc, Croesor, and Beddgelert.
														Princetown.
														Ramsey and Somersham Junction.
20	- -	688	13	721	57	29	807	132	2	81	215	7	1,029	Ravenglass and Eskdale.
-	- -	- -	- -	- -	- -	- -	-	669	- -	3,262	3,931	366	4,297	Redruth and Chasewater.
68	182	8,063	1,040	9,353	306	55	9,714	6,933	148	9,669	16,750	2,511	28,975	Rhondda and Swansea Bay.
544	1,432	22,510	1,418	25,904	2,747	352	29,003	21,978	115	153,852	175,945	2,083	207,031	Rhymney.
														Ross and Monmouth.
-	- -	- -	- -	- -	- -	- -	- -	38	- -	1,465	1,503	- -	1,503	Rowrah and Kelton Fell Mineral.
														Royston and Hitchin.
-	- -	- -	- -	- -	- -	- -	- -	- -	- -	2,383	2,383	- -	2,383	St. Austell and Pentewan Railway, Harbour, and Dock.
														Salisbury Railway and Market House.
-	- -	- -	- -	- -	- -	- -	- -	5	- -	530	535	- -	535	Saundersfoot Railway and Harbour.
														Scarborough and Whitby.
														Scarborough, Bridlington, and West Riding Junction.
126	- -	4,339	47	4,512	609	80	5,201	4,343	46	27,374	31,763	2,848	39,812	Severn and Wye and Severn Bridge.
2,805	- -	39,031	5,164	47,000	7,333	257	54,590	51,938	827	33,744	86,509	2,206	143,305	Sheffield and Midland Committee.
														Shortlands and Nunhead.
														Shrewsbury and Hereford.
														Shropshire Union Railways and Canal.
														Sidmouth.
-	- -	- -	- -	- -	- -	- -	- -	20	- -	349	369	- -	369	Snailbeach District.
4,419	1,116	52,431	1,130	59,096	9,832	1,000	69,928	56,146	4,958	35,109	96,213	2,761	168,902	Somerset and Dorset.
77,348	178,413	850,471	153,961	1,360,193	154,406	24,724	1,539,323	347,311	14,957	171,700	533,968	242,567	2,315,858§	South-Eastern.
														Southport and Cheshire Lines Extension.
-	- -	- -	- -	- -	- -	- -	- -	1,024	- -	10,394	11,418	79	11,497	South Wales Mineral.
190	- -	1,966	34	2,190	257	50	2,497	617	- -	384	1,001	161	3,659	Southwold.
														Staines and West Drayton.
														Stamford and Essendine.
-	- -	- -	- -	- -	- -	- -	- -	1,276	- -	1,172	2,448	114	2,562	Stocksbridge.
														Stonehouse Pool Improvement and Railway.
														Sutton and Willoughby.
2,650	4,991	1,975	1,403	11,019	193	120	11,332	173	- -	415	588	480	12,400	Swansea and Mumbles.
3,423	8,889	104,519	11,022	127,852	10,088	4,000	141,940	67,722	1,429	425,625	494,776	86,120	722,836	Taff Vale.
- -	10	478	- -	488	21	10	519	99	- -	793	892	17	1,428	Talyllyn.
														Teign Valley.

§ Exclusive of 15,454*l.* received from the London, Brighton, and South Coast Railway Company in respect of the greater use made by that Company of the lines between London and Redhill.

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC.					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
				NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).									
	Double or more.	Single.	TOTAL.	1st Class.	2d Class.	3d Class (including Parliamentary).	TOTAL.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	TOTAL.
									Tons.	Tons.			
Tenbury	*Worked by the Great Western and London and North-Western.*												
Thetford and Watton	*Worked by the Great Eastern.*												
Tiverton and North Devon	*Worked by the Great Western.*												
Tottenham and Hampstead Junction	*Worked by the Great Eastern and Midland.*												
Vale of Llangollen	*Worked by the Great Western.*												
Van	—	6	6	Line practically closed for traffic.									
Victoria Station and Pimlico	*Line used by the Great Western, London and North-Western, London, Brighton, and South Coast, and London,*												
Wainfleet and Firsby	*Worked by the Great Northern.*												
Watton and Swaffham	*Worked by the Great Eastern.*												
Wenlock	*Worked by the Great Western.*												
West Cornwall Railway	*See under Great Western.*												
West Lancashire (Including "Liverpool, Southport, and Preston Junction.")	24	1	25	3,765	5,625	777,282	786,672	225	57,128	50,091	200,576	65,486	266,0
West London	*Leased to the West London Extension.*												
West London Extension	*Line worked by the Great Western, London and North-Western, London and South-Western, and London, Brighto*												
West Riding and Grimsby	*Included in the returns of the Great Northern and Manchester, Sheffield, and Lincolnshire.*												
West Somerset	*Leased to the Great Western.*												
West Somerset Mineral	—	12*	12*	47	266	9,856	10,169	—	1,848	2,172	7,560	1,664	9,2
Weymouth and Portland	*Worked by the Great Western and London and South-Western.*												
Wigan Junction	*Worked by the Manchester, Sheffield, and Lincolnshire.*												
Wirral	5	6	11	103,115	256,426	1,305,402	1,664,943	2,007	11,276	12,257	174,882	5,456	180,3
Woodside and South Croydon Joint Committee	*Included in the returns of the London, Brighton, and South Coast and South-Eastern.*												
Woodstock	—	3	3	790	1,169	32,866	34,825	7	4,112	2,305	Mixed.		7,9
Wrexham, Mold, and Connah's Quay (Including the "Buckley.")	13	15	28	7,879	774	569,205	577,858	—	775,536	70,723	41,529	90,518	132,0
Wye Valley	*Worked by the Great Western.*												
TOTAL ENGLAND AND WALES	9,350	5,090	14,440	24,490,458	55,257,414	689,586,343	769,334,215	1,468,562	172,268,608	72,832,908	148,555,526	119,296,126	268,299,3
									12,727				

* Of this length 5 miles are open for goods and mineral traffic only.

TABLE No. 2A.

The following Companies have, in addition, given the Number of Miles of Single, Double, Treble, and Quadruple or more Line of Rails belonging to or worked by them.

NAME OF COMPANY.	LENGTH OF LINE IN MILES OPEN ON 31ST DECEMBER 1893.				
	Single Lines.	Double Lines.	Three Lines.	Four Lines or more.	TOTAL.
ENGLAND AND WALES.					
BARRY	2	26	1	—	29
CHESHIRE LINES COMMITTEE	18	114	2	3	137
GREAT EASTERN	503	585	5	11	1,104
GREAT NORTHERN	197	546	45	49	837
GREAT WESTERN	1,311	1,118	—	53	2,482
HULL, BARNSLEY, AND WEST RIDING JUNCTION	1	64	—	1	66
LONDON AND NORTH-WESTERN	385	1,313	29	164	1,891
LONDON AND SOUTH-WESTERN	230	601	15	17	863
LONDON, BRIGHTON, AND SOUTH COAST	120	299	9	11	439
LONDON, CHATHAM, AND DOVER	10	170	1	7	188
MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE	29	335	4	14	382
MIDLAND	338	916	22	110	1,386
NORTH LONDON	—	7	—	5	12
NORTH STAFFORDSHIRE	39	152	—	2	193
RHYMNEY	8	36	2	—	46
SOUTH-EASTERN	57	341	4	4	406
TAFF VALE	47	46	13	13	119

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.														
1st Class.	2d Class.	3rd Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.	Excess Luggage, Parcels, Carriages, Horses, Dogs, &c.	Mails.	TOTAL Receipts from Passenger Traffic.	Merchandise.	Live Stock.	Minerals.	TOTAL Receipts from Goods Traffic.			
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
														Tenbury.
														Thetford and Watton.
														Tiverton and North Devon.
														Tottenham and Hampstead Junction.
														Vale of Llangollen.
														Van.
tham, and Dover.														*Victoria Station and Pimlico.*
														Wainfleet and Firsby.
														Watton and Swaffham.
														Wenlock.
														West Cornwall Railway.
242	218	11,465	951	12,876	1,984	50	14,910	8,696	134	2,856	11,686	889	27,485	West Lancashire.
South Coast.														*West London.*
														West London Extension.
														West Riding and Grimsby.
														West Somerset.
1	8	138	- -	147	12	- -	159	200	- -	146	346	6,372	6,877	West Somerset Mineral.
														Weymouth and Portland.
														Wigan Junction.
,439	4,361	16,566	4,377	27,743	565	151	28,459	694	- -	317	1,011	649	30,119	Wirral.
														Woodside and South Croydon Joint Committee
17	18	327	9	371	76	- -	447	263	14	124	401	49	897	Woodstock.
219	31	7,037	- -	7,287	694	- -	7,981	8,922	157	26,093	35,172	1,670	44,823	Wrexham, Mold, and Connah's Quay.
														Wye Valley.
26,660	1,775,089	19,431,622	2,279,262	26,012,633	3,871,754	620,748	30,505,135	19,668,904	871,206	13,800,710	34,340,820	3,406,549	68,252,504	TOTAL ENGLAND AND WALES.

† Including 447,720 miles run by mixed trains.

No. 2.—Traffic, &

The Financial Year of the Scotch Railway Compani

NAME OF COMPANY.	Length of Line in Miles open on 31st January 1894.			PASSENGER TRAFFIC.					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
				Number of Passengers conveyed (exclusive of Season and Periodical Tickets).									
	Double or more.	Single.	Total.	1st Class.	2d Class.	3d Class (including Parliamentary).	Total.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	Total.
									Tons.	*Tons.*			
Anstruther and St. Andrew's	*Worked by the North British.*												
Arbroath and Forfar	*Leased to the Caledonian.*												
Ayr and Maybole	*Leased to the Glasgow and South-Western.*												
Caledonian (Including the "Arbroath and Forfar," "Callander and Oban," "Cathcart District," "Crieff and Comrie," "Dundee and Newtyle," "Greenock and Wemyss Bay to 31st July,"* "Killin," "Lanarkshire and Ayrshire," "Solway Junction," part of the "Kilsyth and Bonnybridge," and half the "Glasgow and Kilmarnock" and "Glasgow and Paisley" joint lines.)	501	377	878	1,419,213	427,993	24,091,340	25,938,546	21,526†	14,825,147	3,349,923	7,274,283	6,893,253‡	14,167,
Callander and Oban	*Worked by the Caledonian.*												
Cathcart District	*Worked by the Caledonian.*												
City of Glasgow Union	6	1	7	358,243	-	-	5,797,128	6,155,371	9,081	1,305,947	677,260	-	-	-	-
Crieff and Comrie	*Worked by the Caledonian.*												
Dundee and Newtyle	*Leased to the Caledonian.*												
Edinburgh and Bathgate	*Leased to the North British.*												
Eyemouth	*Worked by the North British.*												
Findhorn	Line closed since 30th January 1869.												
Forth and Clyde Junction	*Leased to the North British.*												
Forth Bridge	*Worked by the North British.*												
Glasgow and South-Western (Including the "Ayr and Maybole," "Kilmarnock and Troon," and half the "Glasgow and Kilmarnock" and "Glasgow and Paisley" joint lines.)	275	110	385	515,352	-	-	11,961,564	12,476,916	5,754†	4,612,662	1,168,559	3,185,549	2,694,756	5,880,
Glasgow, Yoker, and Clydebank	*Worked by the North British.*												
Great North of Scotland (Including the Buckie Extension.)	36	280	316	110,053	-	-	2,716,758	2,826,811	2,367	333,897	422,081	1,186,592	709,225	1,895,
Highland, for the year ended 28th February 1894	10	435	445	99,030	2,017		1,619,002	1,720,049	3,402	247,166	239,235	Mixed.			2,115,
Killin	*Worked by the Caledonian.*												
Kilmarnock and Troon	*Leased to the Glasgow and South-Western.*												
Kilsyth and Bonnybridge	*Worked by the Caledonian and North British.*												
Lanarkshire and Ayrshire	*Worked by the Caledonian.*												
Newport	*Leased to the North British.*												
North British (Including the "Anstruther and St. Andrew's," "Edinburgh and Bathgate," "Eyemouth," "Forth and Clyde Junction," "Forth Bridge," "Glasgow, Yoker, and Clydebank," "Newport," and part of the "Kilsyth and Bonnybridge.	483	619	1,102	1,547,894	799	28,997,570	30,546,263	34,198	13,104,427	3,620,967	7,851,417	7,626,967	15,47
Portpatrick and Wigtownshire Joint Committee	-	82	82	21,129	369	442,322	463,820	121	73,954	51,315	253,810	140,591	394,
Solway Junction	*Leased to the Caledonian.*												
Total Scotland	1,311	1,904	3,215	4,070,914	431,178	75,625,684	80,127,776	76,449	34,503,200	9,529,340	19,751,651	18,064,792	39,932

* Amalgamated with the Caledonian as from 1st August 1893. † Equivalent number of annual tickets. ‡ Including 2,651,644 miles run by mineral tra

Table No. 2A.

The following Company has, in addition, given the Number of Miles of Single, Double, Treble, and Quadruple or more Lin of Rails belonging to or worked by it.

Name of Company.	Length of Line in Miles on 31st January 1894.				
	Single Lines.	Double Lines.	Three Lines.	Four Lines or more.	Total.
Scotland.					
North British	619	470	8	5	1,102

SCOTLAND, in 1893.

EXCEPT WHEN OTHERWISE STATED, ENDED ON THE 31ST JANUARY 1894.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.					EXCESS LUGGAGE, PARCELS, CARRIAGES, HORSES, DOGS, &c.	MAILS.	TOTAL RECEIPTS FROM PASSENGER TRAFFIC.	MERCHANDISE.	LIVE STOCK.	MINERALS.	TOTAL RECEIPTS FROM GOODS TRAFFIC.			
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.										
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
														Anstruther and St. Andrew's.
														Arbroath and Forfar.
														Ayr and Maybole.
132,460	11,701	770,355	89,414	1,003,630	168,998	73,480	1,246,108	877,969	72,500	1,086,302	2,036,771	179,191	3,462,070	Caledonian.
														Callander and Oban.
														Cathcart District.
2,113	-	- 18,793	3,705	24,611	5,851	100	30,562	23,100	1,084	17,675	41,859	8,778	81,199	City of Glasgow Union.
														Crieff and Comrie.
														Dundee and Newtyle.
														Edinburgh and Bathgate.
														Eyemouth.
														Findhorn.
														Forth and Clyde Junction.
														Forth Bridge.
44,049	-	- 357,744	37,290	439,083	72,188	16,787	528,058	372,127	26,369	314,628	713,124	48,137	1,289,319	Glasgow and South-Western.
														Glasgow, Yoker, and Clydebank.
13,205	-	- 126,212	14,214	153,631	22,316	22,330	198,277	126,807	14,761	40,759	182,327	12,059	392,663	Great North of Scotland.
32,927	231	141,662	6,563	181,433	40,003	55,526	276,962	125,503	28,240	31,835	185,578	9,926	472,466	Highland.
														Killin.
														Kilmarnock and Troon.
														Kilsyth and Bonnybridge.
														Lanarkshire and Ayrshire.
														Newport.
118,616	402	882,872	90,209	1,092,099	170,071	32,230	1,294,400	945,126	77,341	991,171	2,013,638	67,354	3,375,392	North British.
3,206	67	17,959	317	21,549	6,297	4,936	32,782	10,149	6,046	5,364	21,559	3,268	57,609	Portpatrick and Wigtownshire Joint Committee.
														Solway Junction.
346,576	12,451	2,315,597	241,412	2,916,036	485,724	265,389	3,607,149	2,480,781	226,341	2,487,734	5,194,856	328,713	9,130,718	TOTAL SCOTLAND.

‖ Including 2,115,972 miles run by mixed trains.

No. 2.—Traffic, &c

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC.					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
				NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).				Holders of Season or Periodical Tickets.					
	Double or more.	Single.	Total.	1st Class.	2d Class.	3d Class (including Parliamentary).	Total.		Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	Total.
									Tons.	*Tons.*			
Ballycastle	- -	16	16	2,662	4,103	98,437	105,202	26	2,969	6,561	Mixed.		37,848
Belfast and County Down	12	64	76	147,609	497,195	1,400,308	2,045,112	12,552	123,169	81,964	484,094	86,247	570,341
Belfast and Northern Counties (Including the "Derry Central," "Draperstown," and "Limavady and Dungiven.")	33	216	249	106,762	202,106	2,262,799	2,571,667	746	215,478	377,708	901,499	442,127	1,343,626
City of Dublin Junction	*Worked by the Dublin, Wicklow, and Wexford.*												
Clara and Banagher	*Worked by the Great Southern and Western of Ireland.*												
Clonakilty Extension	*Worked by the Cork, Bandon, and South Coast.*												
Cork and Macroom Direct	- -	25	25	6,607	17,592	123,737	147,936	28	4,132	26,464	Mixed.		72,824
Cork, Bandon, and South Coast (Including the "Baltimore Extension," "Bantry Extension," "Bantry Bay Extension," "Clonakilty Extension," and "Ilen Valley.")	- -	94	94	15,455	35,749	307,323	358,527	167	13,512	94,873	69,973	98,106	316,179
Cork, Blackrock, and Passage	- -	6	6	194,964	- -	384,553	579,517	974	- -	1,307	69,846	- -	69,846
Derry Central	*Worked by the Belfast and Northern Counties.*												
Donegal, for 10 months ended 1st November 1893† (including the "Donegal and Killybegs.")‡	- -	51	51	1,960	8,643	88,409	99,012	618	3,690	23,660	Mixed.		75,607
Draperstown	*Worked by the Belfast and Northern Counties.*												
Dublin and Kingstown	*Leased to the Dublin, Wicklow, and Wexford.*												
Dublin, Wicklow, and Wexford (Including the "City of Dublin Junction," and "Dublin and Kingstown.")	29	115	144	354,112	2,201,061	3,018,444	5,573,617	8,400	23,768	156,062	943,163	226,248	1,169,411
Dundalk, Newry, and Greenore	- -	26	26	2,458	6,465	115,482	124,405	44	36,220		39,460	35,464	74,924
Enniskillen, Bundoran, and Sligo	*Worked by the Great Northern of Ireland.*												
Fermoy and Lismore	*Worked by the Waterford, Dungarvan, and Lismore.*												
Great Northern of Ireland (Including the "Enniskillen, Bundoran, and Sligo," for the year ended 30th September 1893.)	139	383	522	158,362	632,628	3,933,633	4,724,623	2,727	285,815	632,777	2,106,040	997,331	3,103,371
Great Southern and Western of Ireland‖ (Including the "Clara and Banagher," "Fermoy and Lismore,"‖ "Headford and Kenmare," "Killorglin and Valentia," and "Mitchelstown and Fermoy.")	206	398	604	165,531	349,469	2,544,974	3,059,974	1,036	197,188	752,942	2,186,667	1,347,649	3,534,316
Ilen Valley	*Worked by the Cork, Bandon, and South Coast.*												
Kilkenny Junction	*Worked by the Waterford and Central Ireland.*												
Letterkenny	*Worked by the Londonderry and Lough Swilly.*												
Limavady and Dungiven	*Worked by the Belfast and Northern Counties.*												
Limerick and Kerry	*Worked by the Waterford and Limerick.*												
Listowel and Ballybunion	- -	9	9	3,177	- -	38,157	41,334	170¶	6,432	1,155	Mixed.		22,534
Londonderry and Lough Swilly (Including the "Letterkenny.")	- -	31	31	10,012	34,002	260,604	304,618	555	10,779	37,210	Mixed.		100,691

* Including 148,100 miles run by mixed trains.
† The dates to which the accounts of the Company are made up have been changed from 30th June and 31st December to the 1st May and 1st November.
‡ Opened for traffic on 18th August 1893. § Including receipts from carriage of minerals. ¶ Weekly tickets.

IRELAND, in 1893.

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.														
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL from Passengers.	Excess Luggage, Parcels, Carriages, Horses, Dogs, &c.	Mails.	TOTAL Receipts from Passenger Traffic.	Merchandise.	Live Stock.	Minerals.	TOTAL Receipts from Goods Traffic.			
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
147	170	2,285	17	2,619	194	300	3,113	1,173	167	208	1,548	19	4,680	Ballycastle.
7,272	17,923	40,120	11,264	76,579	4,861	1,400	82,840	18,875	1,686	9,412	29,973	957	113,770	Belfast and County Down.
1,431	15,446	84,579	6,503	117,959	12,512	11,776	142,247	91,525	5,400	23,968	120,893	1,908	265,048	Belfast and Northern Counties.
														City of Dublin Junction.
														Clara and Banagher.
														Clonakilty Extension.
521	1,010	5,012	136	6,679	839	- -	7,518	6,081	1,268	673	8,022	141	15,681	Cork and Macroom Direct.
3,105	5,441	18,460	629	27,635	3,137	3,026	33,798	30,023	6,958	1,281	38,262	135	72,195	Cork, Bandon, and South Coast.
4,107	- -	5,279	1,493	10,879	469	- -	11,348	325	- -	- -	325	10,156	21,829	Cork, Blackrock, and Passage.
														Derry Central.
267	697	3,802	65	4,831	641	221	5,693	6,066	947	306	7,319	33	13,045	Donegal.†
														Draperstown.
														Dublin and Kingstown.
18,979	64,357	65,951	22,946	172,233	17,350	14,606	204,189	48,537	8,582	2,327	59,446	5,156	268,791	Dublin, Wicklow, and Wexford.
188	297	2,783	55	3,323	1,155	24	4,502	5,513§	611	- -	6,124	3,105	13,731	Dundalk, Newry, and Greenore.
														Enniskillen, Bundoran, and Sligo.
														Fermoy and Lismore.
31,102	64,020	214,236	9,425	318,783	38,626	44,344	401,753	258,909	39,416	40,529	338,854	8,678	749,285	Great Northern of Ireland.
43,119	61,416	215,850	4,217	324,602	55,613	43,861	424,076	288,839	79,830	28,078	396,747	3,629	824,452	Great Southern and Western of Ireland.
														Ilen Valley.
														Kilkenny Junction.
														Letterkenny.
														Limavady and Dungiven.
														Limerick and Kerry.
155	- -	1,068	39	1,262	51	87	1,400	211	1	529	741	142	2,283	Listowel and Ballybunion.
595	1,271	6,575	306	8,747	583	300	9,630	5,144	932	567	6,643	114	16,387	Londonderry and Lough Swilly.

The "Fermoy and Lismore" Railway was worked for two months by the "Great Southern and Western" Company and for the remainder of the year by the Waterford, Dungarvan, and Lismore" Company. The figures here given include the statistics of the traffic and receipts of the "Fermoy and Lismore" line for the months. The length of the "Fermoy and Lismore" line is included in the return of the "Waterford, Dungarvan, and Lismore" Company.

NAME OF COMPANY.	LENGTH OF LINE IN MILES open on 31st December 1893.			PASSENGER TRAFFIC.					GOODS TRAFFIC.		NUMBER OF MILES TRAVELLED BY TRAINS.		
				NUMBER OF PASSENGERS CONVEYED (exclusive of Season and Periodical Tickets).									
	Double or more.	Single.	TOTAL.	1st Class.	2d Class.	3d Class (including Parliamentary).	TOTAL.	Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	Passenger Trains.	Goods and Mineral Trains.	TOTAL.
									Tons.	*Tons.*			
Midland Great Western of Ireland (Including the "Ballinrobe and Claremorris" and "Loughrea and Attymon Light Railways.")	160	294	454	87,987	137,975	988,472	1,214,434	287	43,569	383,475	1,336,653	875,852	2,212,50
Rathkeale and Newcastle Junction	*Worked by the Waterford and Limerick.*												
Sligo, Leitrim, and Northern Counties	- -	43	43	1,933	6,837	82,600	91,370	40	13,420	26,867	Mixed.		100,[illegible]
Southern	*Worked by the Waterford and Limerick.*												
Tralee and Fenit	*Worked by the Waterford and Limerick.*												
Waterford and Central Ireland, for the year ended 29th September 1893. (Including the "Central Ireland" for the year ended 29th September 1893, and the "Kilkenny Junction" for the year ended 1st November 1893.)	- -	67	67	8,000	38,049	162,827	208,876	770	23,286	79,902	144,524	42,262	186,78
Waterford and Limerick (Including the "Athenry and Ennis Junction" to 27th July,† "Athenry and Tuam" to 30th September,§ "Limerick and Kerry," "Rathkeale and Newcastle Junction," "Southern," and "Tralee and Fenit.")	32	247	279	36,893	112,795	1,013,964	1,163,652	516	60,094	300,489	696,423	240,527	936,95
Waterford and Tramore	- -	7	7	78,033	- -	133,872	211,905	71	1,900	2,200	42,735	97	42,83
Waterford and Wexford	- -	9	9	Line practically closed for traffic.									
Waterford, Dungarvan, and Lismore "Including the "Fermoy and Lismore" for the ten months ended 31st December 1893.	- -	58	58	4,617	16,379	147,838	168,834	7	3,662	37,755	—	24,570	121,74
TOTAL	611	2,150	2,761	1,387,134	4,301,048	17,106,433	22,794,615	29,734	1,032,863	3,023,371	9,021,077	4,416,480	14,092,72
									36,220				

* Including 97,174 miles run by mixed trains.

† Including 655,171 miles run by mixed trains.

LIGHT RAILWAYS AUTHORISED UNDER TH

Ballinlscarthy and Timoleague Junction	*See* Timoleague and Courtmacsherry Extension, &c.												
Ballinrobe and Claremorris	*Worked by the Midland Great Western of Ireland.*												
Bessbrook and Newry Tramway	- -	3	3	4,050	- -	69,453	73,503	25	7,837	6,531	Mixed.		19,71
Carrickfergus Harbour Junction	- -	1	1	- -	- -	- -	- -	- -	5,906	- -	- -	497	49
Cavan, Leitrim, and Roscommon Light Railway and Tramway, for the year ended 1st November 1893.	- -	48	48	3,195	- -	81,520	84,715	15	5,097	12,019	Mixed.		93,84
Clogher Valley Tramway, for the year ended 30th September 1893.	- -	37	37	7,171	- -	100,809	107,980	17	4,777	11,393	Mixed.		89,[illegible]
Cork and Muskerry	- -	18	18	54,884	- -	282,107	336,991	68	5,573	7,888	Mixed.		76,97
Donoughmore Extension	- -	9	9	982	- -	23,529	24,511	4	1,499		Mixed.		17,[illegible]
Loughrea and Attymon	*Worked by the Midland Great Western of Ireland.*												
Mitchelstown and Fermoy	*Worked by the Great Southern and Western of Ireland.*												
Schull and Skibbereen	- -	15	15	1,078	- -	37,255	38,333	- -	- -	2,219	19,708	1,973	21,68
South Clare for the year ended 31st October 1893	- -	26	26	11,387	- -	61,954	73,341	- -	- -	4,094	Mixed.		50,18
Timoleague and Courtmacsherry Extension, and Ballinlscarthy and Timoleague Junction.	- -	9	9	4,502	- -	40,329	44,831	2	2,324	5,306	17,285	1,152	18,43
Tralee and Dingle, for the year ended 30th November 1893.	- -	37	37	2,240	- -	30,510	32,750	- -	123	8,700	Mixed.		57,33
West Clare, for the year ended 31st October 1893	- -	27	27	10,987	- -	92,504	103,491	- -	- -	10,724	Mixed.		70,[illegible]
TOTAL LIGHT RAILWAYS	- -	230	230	100,476	- -	819,970	920,446	131	31,637	68,874	36,993	3,622	517,28
									1,499				
GRAND TOTAL, IRELAND	611	2,380	2,991	1,487,610	4,301,048	17,926,403	23,715,061	29,865	1,064,500	3,092,245	9,058,070	4,420,102	14,610,91
									37,719				

* Including receipts from carriage of minerals.

TABLE No. 2A.

The following Company has, in addition, given the Number of Miles of Single, Double, Treble, and Quadruple or more Line of Rails belonging to or worked by it.

NAME OF COMPANY.	LENGTH OF LINE IN MILES, ON 31ST DECEMBER 1893.				
	Single Lines.	Double Lines.	Three Lines.	Four Lines or more.	TOTAL.
IRELAND.					
DUBLIN, WICKLOW, AND WEXFORD	115	28	1	—	144

RECEIPTS (GROSS) FROM PASSENGER TRAFFIC.								RECEIPTS (GROSS) FROM GOODS TRAFFIC.				MISCELLANEOUS, RENTS, TOLLS, NAVIGATION, STEAMBOATS, &c.	TOTAL RECEIPTS FROM ALL SOURCES OF TRAFFIC.	NAME OF COMPANY.
RECEIPTS FROM PASSENGERS.					EXCESS LUGGAGE, PARCELS, CARRIAGES, HORSES, DOGS, &c.	MAILS.	TOTAL RECEIPTS FROM PASSENGER TRAFFIC.	MERCHANDISE.	LIVE STOCK.	MINERALS.	TOTAL RECEIPTS FROM GOODS TRAFFIC.			
1st Class.	2d Class.	3d Class (including Parliamentary).	Holders of Season or Periodical Tickets.	TOTAL FROM PASSENGERS.										
£	£	£	£	£	£	£	£	£	£	£	£	£	£	
,458	36,078	113,486	1,600	177,622	30,948	29,190	237,760	187,456	82,402	7,591	277,449	10,693	525,902	Midland Great Western of Ireland.
														Rathkeale and Newcastle Junction.
374	914	5,118	83	6,489	655	376	7,520	5,408	1,943	1,600	8,951	186	16,657	Sligo, Leitrim, and Northern Counties.
														Southern.
														Tralee and Fenit.
,373	4,654	9,247	795	16,069	1,737	1,250	19,056	13,263	6,194	3,181	22,638	1,951	43,645	Waterford and Central Ireland.
,875	12,375	50,624	1,669	70,543	12,763	10,599	93,905	70,922	24,597	9,525	105,044	4,303	203,252	Waterford and Limerick.
,544	- -	2,852	635	6,031	239	30	6,300	254	8	95	357	86	6,743	Waterford and Tramore.
														Waterford and Wexford.
645	1,570	6,959	52	9,226	1,352	211	10,789	8,612	2,430	340	11,382	703	22,874	Waterford, Dungarvan, and Lismore.
,257	287,639	854,286	61,929	1,362,111	188,725	161,601	1,707,437	1,047,136	263,372	130,210	1,440,718	52,095	3,200,250	TOTAL.

‡ Amalgamated with the Waterford and Limerick as from 28th July 1893.

§ Sold to the Waterford and Limerick as from 1st October 1893.

AMWAYS (IRELAND) ACTS, 1860 TO 1883.

														Balliniscarthy and Timoleague Junction.
														Ballinrobe and Claremorris.
47	- -	529	22	598	30	- -	628	368	- -	430	798	62	1,488	Bessbrook and Newry Tramway.
-	- -	- -	- -	- -	- -	- -	- -	- -	- -	89	89	6	95	Carrickfergus Harbour Junction.
324	- -	3,114	17	3,455	505	24	3,984	2,458	1,426	550	4,434	10	8,428	Cavan, Leitrim, and Roscommon Light Railway and Tramway.
354	- -	2,563	45	2,962	246	90	3,298	2,370	150	509	3,029	74	6,401	Clogher Valley Tramway.
,468	- -	5,188	155	6,811	347	- -	7,158	1,124	292	374	1,790	79	9,027	Cork and Muskerry.
25	- -	382	4	411	10	- -	421	125*	8	- -	133	8	562	Donoughmore Extension.
														Loughrea and Attymon.
														Mitchelstown and Fermoy.
96	- -	1,052	- -	1,148	62	- -	1,210	560	260	- -	820	- -	2,030	Schull and Skibbereen.
787	- -	2,244	- -	3,031	100	- -	3,131	736	295	- -	1,031	26	4,188	South Clare.
109	- -	577	2	688	80	40	808	365	95	116	576	105	1,489	Timoleague and Courtmacsherry Extension, and Balliniscarthy and Timoleague Junction.
257	- -	1,550	- -	1,807	962	- -	2,769	1,639	211	21	1,871	7	4,647	Tralee and Dingle.
1,076	- -	4,612	- -	5,688	312	321	6,321	2,642	1,030	- -	3,672	72	10,065	West Clare.
4,543	- -	21,811	245	26,599	2,654	475	29,728	12,387	3,767	2,089	18,243	449	48,420	TOTAL LIGHT RAILWAYS.
2,800	287,639	876,097	62,174	1,388,710	186,379	162,076	1,737,165	1,059,523	267,139	132,299	1,458,961	52,544	3,248,670	GRAND TOTAL, IRELAND.

† Including 476,672 miles run by mixed trains.

‡ Including 1,131,843 miles run by mixed trains.

RAILWAY RETURNS.—1893.

No. 3.—WORKING EXPENDITURE, NET RECEIPTS, AND ROLLING STOCK.

RETURN showing the AMOUNT of the WORKING EXPENDITURE, and of the NET RECEIPTS, &c., and NUMBER of EACH KIND of ROLLING STOCK, for the several RAILWAY COMPANIES, in ENGLAND and WALES, SCOTLAND, and IRELAND for the Year 1893.

No. 3.—Working Expenditure, Net Receipts, and

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Abbotsbury	*Worked by the Great Western.*										
Aberdare	*Leased to the Taff Vale.*										
Abingdon	*Leased to the Great Western.*										
Alexandra (Newport and South Wales) Docks and Railway.	3	2,638	8,531	791	4,054	8,794	6,335	- -	- -	- -	777
Bala and Festiniog	*Worked by the Great Western.*										
Banbury and Cheltenham Direct	*Worked by the Great Western.*										
Barnoldswick	*Worked by the Midland.*										
Barry	29	13,440	22,515	3,201	15,694	8,515	20,115	90	70	26	2,028
Birkenhead	*Vested jointly in the Great Western and the London and North-Western.*										
Bishop's Castle	10	818	1,206	287	399	310	33	49	- -	1	90
Brading Harbour Improvement and Railway	*Worked by the Isle of Wight.*										
Brecon and Merthyr Tydfil Junction	59	9,888	13,287	4,144	12,590	3,466	1,747	58	- -	154	85
Bridgwater	*See under Somerset and Dorset.*										
Bridport	*Leased to the Great Western.*										
Brighton and Dyke	*Worked by the London, Brighton, and South Coast.*										
Buckfastleigh, Totnes, and South Devon	*Worked by the Great Western.*										
Buckley	*Worked by the Wrexham, Mold, and Connah's Quay.*										
Burry Port and Gwendreath Valley	19	1,655	1,911	104	765	955	350	- -	- -	- -	130
Cambrian (Including the "Mid Wales" and the Llanyblodwell Branch of the "Shropshire.")	232	38,096	36,584	11,636	37,682	10,945	4,084	453	60	525	612
Cannock Chase and Wolverhampton	6	1,325	- -	- -	381	413	- -	- -	- -	- -	- -
Charnwood Forest	*Worked by the London and North-Western.*										
Cheshire Lines Committee (Including "Southport and Cheshire Lines Extension.")	137	83,746	221,876	32,094	214,977	29,347	21,828	1,672	909	859	3,218
City and South London	3	1,016	11,691*	911	11,557	3,356	1,065	29	17	- -	84
Cleator and Workington Junction	29	3,807	14,403	529	4,652	1,334	613	6	- -	22	717
Cockermouth, Keswick, and Penrith	32	4,629	14,367		4,227	1,619	626	111	- -	62	44
Colchester, Stour Valley, Sudbury, and Halstead	*Leased to the Great Eastern.*										
Colne Valley and Halstead	19	1,739	2,782	801	2,870	1,560	379	11	- -	76	35
Cornwall Minerals	*Worked by the Great Western.*										
Cornwall Minerals (Goonbarrow Branch)‡ (The main line of the Company is worked by the "Great Western Company.")	4	20	44	- -	39	4	- -	- -	- -	- -	- -
Corris	11	495	435	201	1,244	199	93	14	- -	12	- -
Corwen and Bala	*Leased to the Great Western.*										
Cowbridge and Aberthaw	*Worked by the Taff Vale.*										
Cranbrook and Paddock Wood (Light)	*Worked by the South-Eastern.*										
Devon and Somerset	*Worked by the Great Western.*										
Didcot, Newbury, and Southampton	*Worked by the Great Western and London and South-Western.*										
Dover and Deal Committee	9	2,220	3,698		1,767	696	150	58	- -	- -	76
Dowlais (Including the "Dowlais Extension.")	2	No public traffic.									
Downham and Stoke Ferry	*Leased to the Great Eastern.*										

* Cost of locomotive and generating power.

† Electric locomotives.

olling Stock, ENGLAND AND WALES, in 1893.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	Rolling Stock on 31st December 1893. Locomotives.	Carriages, Waggons, Trucks, &c. Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	Name of Company.
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
												Abbotsbury.
												Aberdare.
												Abingdon.
46,559	179	78,658	142,434	63,776	55	24	- -	- -	548	- -	548	Alexandra (Newport and South Wales) Docks and Railway.
												Bala and Festiniog.
												Banbury and Cheltenham Direct.
												Barnoldswick.
55,573	56	141,323	318,142	176,819	44	67	35	8	245	331	619	Barry.
												Birkenhead.
-	574	3,767	3,471	296 Deficiency.	109	2	6	- -	18	- -	24	Bishop's Castle.
												Brading Harbour Improvement and Railway.
-	- -	45,419	78,937	33,518	58	29	42	5	536	21	604	Brecon and Merthyr Tydfil Junction.
												Bridgwater.
												Bridport.
												Brighton and Dyke.
												Buckfastleigh, Totnes, and South Devon.
												Buckley.
2,913	- -	8,783	12,344	3,561	71	4	- -	- -	53	- -	53	Burry Port and Gwendreath Valley.
-	994	141,671	253,790	112,119	56	67	164	70	1,969	37	2,240	Cambrian.
-	- -	2,119	2,845	726	- -	- -	- -	- -	510	- -	510	Cannock Chase and Wolverhampton.
												Charnwood Forest.
-	43,957	654,483	806,284	151,801	81	- -	447	118	2,773	- -	3,338	Cheshire Lines Committee.
-	- -	29,726	45,980	16,254	65	16†	36	- -	- -	- -	36	City and South London.
-	392	26,475	44,378	17,903	60	5	- -	- -	206	10	216	Cleator and Workington Junction.
-	55	25,740	44,024	18,284	58	Provided by the "London and North-Western" and "North-Eastern" Companies.						Cockermouth, Keswick, and Penrith.
												Colchester, Stour Valley, Sudbury, and Halstead.
-	37	10,290	12,805	2,515	80	4	10	7	88	2	107	Colne Valley and Halstead.
												Cornwall Minerals.
-	- -	107	269	162	- -	1	- -	- -	- -	3	3	Cornwall Minerals (Goonbarrow Branch).‡
-	- -	2,693	3,904	1,211	69	3	6	1	18	- -	25	Corris.
												Corwen and Bala.
												Cowbridge and Aberthaw.
												Cranbrook and Paddock Wood (Light).
												Devon and Somerset.
												Didcot, Newbury, and Southampton.
-	134	8,799	8,568	231 Deficiency.	103	Locomotive power and rolling stock provided by the Companies owning the line.						Dover and Deal Committee.
												Dowlais.
												Downham and Stoke Ferry.

‡ Line opened for traffic in October 1893.

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Easingwold	2	145	371	7	440	88	23	1	- -	1	143
East and West Junction	*Worked by the East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction*										
East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction Joint Committee. (Including the "Evesham, Redditch, and Stratford-upon-Avon Junction.")	52	4,208	8,869	4,621	5,084	1,782	245	52	- -	180	96
East and West Yorkshire Union	3	252	1,169		177	584	256	- -	- -	-	- -
East Cornwall Mineral† (Calstock to Callington)	7	238	755	134	437	319	273	- -	- -	- -	- -
East Lincolnshire	*Leased to the Great Northern.*										
East London (Joint Committee)	7	4,193	- -	- -	24,936	5,239	638	107	40	- -	57
Ely and Newmarket	*Leased to the Great Eastern.*										
Ely and St. Ives	*Worked by the Great Eastern.*										
Ely Valley	*Worked by the Great Western.*										
Evesham, Redditch, and Stratford-upon-Avon Junction.	*Worked by the East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction*										
Exmouth Docks and Railway‖	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Felixstowe Dock and Railway¶	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Festiniog	14	1,214	2,246	1,423	2,974	958	692	200	- -	31	- -
Forcett	5	370	710		42	389	31	- -	- -	- -	- -
Forest of Dean Central	*Worked by the Great Western.*										
Freshwater, Yarmouth, and Newport	*Worked by the Isle of Wight Central.*										
Furness (Including half the "Whitehaven, Cleator, and Egremont" Joint Line.)	134	34,659	53,126	44,118	55,260	12,341	13,183	531	16	590	442
Garstang and Knot End	7	625	438	130	456	267	16	41	- -	- -	155
Glyn Valley Tramway	9	267	762	243	392	326	212	- -	- -	- -	- -
Golden Valley	19	1,053	543	132	397	302	42	3	- -	- -	- -
Gorsedda Junction and Portmadoc	11	- -	- -	- -	- -	20	3	- -	- -	- -	- -
Great Eastern (Including the "Colchester, Stour Valley, Sudbury, and Halstead," "Downham and Stoke Ferry," "Ely and Newmarket," "Ely and St. Ives," "London and Blackwall," "Mellis and Eye," "Northern and Eastern," "Ramsey and Somersham Junction," "Thetford and Watton," "Watton and Swaffham," and the "Wivenhoe and Brightlingsea," to 30th June,* half the "Great Northern and Great Eastern Joint Line," and part of the "Tottenham and Hampstead Junction.")	1,104	346,558	699,028	166,101	754,003	113,816	168,137	14,990	10,530	13,555	9,605
Great Marlow	3	607	1,215		564	197	92	65	- -	2	- -
Great Northern (Including the "East Lincolnshire," "Holme and Ramsey," "Horncastle," "Louth and East Coast," "Nottingham and Grantham," 'Nottingham Suburban,' "Royston and Hitchin," "Stamford and Essendine," "Sutton and Willoughby," "Wainfleet and Firsby," and "Skegness Extension," and part of the "Great Northern and Great Eastern," "Halifax and Ovenden," and "West Riding and Grimsby" joint lines.)	887	383,478	697,253	175,321	810,762	109,952	131,178	13,331	4,712	16,083	9,582
Great North of England, Clarence, and Hartlepool Junction.	*Leased to the North-Eastern.*										
Great Western (Including the "Abbotsbury," "Abingdon," "Alcester Joint Line," "Bala and Festiniog," "Banbury and Cheltenham Direct," "Bridport," "Buckfastleigh, Totnes, and South Devon," "Cornwall Minerals," "Corwen and Bala," "Devon and Somerset," "Didcot, Newbury, and Southampton (except Shawford Junction Line)," "Ely Valley," "Forest of Dean Central," "Helston," "Kington and Eardisley," "Leominster and Kington," "Llangollen and Corwen," "Marlborough," "Milford," "Minehead," "Much Wenlock and Severn Junction," "Nantwich and Market Drayton," "Oldbury," "Princetown," "Ross and Monmouth," "Staines and West Drayton," "Teign Valley," "Tiverton and North Devon," "Vale of Llangollen," "Wenlock" and "Wenlock Extensions," "West Cornwall Railway," "West Somerset," and "Wye Valley;" and jointly with other Companies the "Birkenhead," "Clifton Extension," "Halesowen," "Hammersmith and City," "Shrewsbury and Hereford," "Shrewsbury and Wellington," "Shrewsbury and Welshpool," "Tenbury," "Vale of Towy," "Victoria Station and Pimlico," "West London," "Weymouth and Portland," and "Wrexham and Minera Extension.")	2,482	1,010,556	1,312,405	410,727	1,386,081	184,656	266,439	55,034	8,789	30,610	26,563

* Sold to the Great Eastern as from 1st July, 1893.

† The line was worked by the "Plymouth, Devonport, and South-Western Junction" Railway Company.

‡ And one stationary engine.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	ROLLING STOCK on 31st December 1893.						NAME OF COMPANY.
							Carriages, Waggons, Trucks, &c.					
						Locomotives.	Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
- -	17	1,236	1,409	173	88	1	2	- -	- -	- -	2	Easingwold.
Joint Committee.												*East and West Junction.*
- -	100	25,237	27,125	1,888	93	9	15	3	42	4	64	East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction Joint Committee.
- -	- -	2,438	5,706	3,268	43	- -	- -	- -	- -	- -	- -	East and West Yorkshire Union.
- -	- -	2,156	2,205	49	98	2‡	- -	- -	148	- -	148	East Cornwall Mineral† (Calstock to Callington).
												East Lincolnshire.
-	1,252§	36,462	50,377	13,915	- -	The traffic is carried in the trains of the Companies using the Line.						East London (Joint Committee).
												Ely and Newmarket.
												Ely and St. Ives.
												Ely Valley.
Joint Committee.												*Evesham, Redditch, and Stratford-upon-Avon Junction.*
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	Exmouth Docks and Railway.‖
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	Felixstowe Dock and Railway.¶
-	27	9,765	17,799	8,034	55	9	55	5	1,172	-	1,232	Festiniog.
- -	- -	1,542	3,040	1,498	51	Supplied by the "North-Eastern" Company.						Forcett.
												Forest of Dean Central.
												Freshwater, Yarmouth, and Newport.
10,294	- -	224,560	438,232	213,672	51	122	265	96	7,142	76	7,579	Furness.
- -	116**	2,244	3,364	1,120	67	2	4	- -	35	- -	39	Garstang and Knot End.
- -	- -	2,202	3,796	1,594	58	3	12	- -	216	15	243	Glyn Valley Tramway.
- -	525	2,997	2,116	881 Deficiency.	142	1	2	1	- -	- -	3	Golden Valley.
- -	- -	28	- -	28 Deficiency.	- -	1	- -	- -	7	- -	7	Gorsedda Junction and Portmadoc.
228,284	7,537	2,532,144	4,270,724	1,738,580	59	962	2,965	1,040	16,258	369	20,632	Great Eastern.
- -	23	2,765	3,929	1,164	70	Supplied by the "Great Western" Company.						Great Marlow.
15,582	7,280	2,374,514	3,995,434	1,620,920	59	983	2,179	644	31,985	526	35,334	Great Northern.
												Great North of England, Clarence, and Hartlepool Junction
164,082	82	4,856,024	8,814,224	3,958,200	55	1,700	3,733	1,859	44,043	2,583	52,218	Great Western.

§ Cost of pumping for tunnels.
‖ The Railway is merely a branch line from the Docks to the London and South-Western Railway.
¶ The Railway is merely a branch line from the Docks to the Great Eastern Railway.
** Hire of locomotive.

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Gwendraeth Valleys	3	224	400	37	276	92	116	-	-	-	37
Halesowen	*Worked by the Great Western and Midland Companies.*										
Halifax and Ovenden	*Included in the Returns of the Great Northern and Lancashire and Yorkshire.*										
Halifax High Level	*See* note, page iii.										
Hammersmith and City Junction	*Worked jointly by the Great Western and Metropolitan.*										
Harborne	*Worked by the London and North-Western.*										
Harrow and Stanmore	*Worked by the London and North-Western.*										
Hayling Railways	*Leased to the London, Brighton, and South Coast.*										
Helston	*Worked by the Great Western.*										
Horncastle	*Worked by the Great Northern.*										
Hounslow and Metropolitan	*Worked by the Metropolitan District.*										
Hull, Barnsley, and West Riding Junction Railway and Dock.	66	16,481	34,809	6,665	52,425	13,101	5,938	26	-	617	3,661
Isle of Wight (Including "Brading Harbour.")	14	2,466	4,187	813	4,449	1,721	918	1,019	32	-	245
Isle of Wight Central (Including the "Freshwater, Yarmouth, and Newport.")	34	3,658	5,914	1,076	4,515	1,929	306	818	-	-	515
Kettering, Thrapstone, and Huntingdon	*Worked by the Midland.*										
King's Lynn Docks and Railway*	-	-	-	-	-	-	-	-	-	-	-
Kington and Eardisley	*Worked by the Great Western.*										
Lancashire and Yorkshire (Including part of the "Halifax and Ovenden," "North Union," "Preston and Longridge," and "Preston and Wyre" Joint Lines.)	523	404,001	771,336	208,258	891,228	85,517	142,083	10,859	14,258	15,819	10,420
Leominster and Kington	*Worked by the Great Western.*										
Liskeard and Caradon (Including the "Liskeard and Looe Union Railway and Canal.")	22	1,262	789	207	882	97	139	2	-	-	16
Liskeard and Looe Union Railway and Canal	*Worked by the Liskeard and Caradon.*										
Liverpool Overhead†	5	1,730	‡5,904	-	8,596	2,527	1,826	-	-	2	138
Liverpool, Southport, and Preston Junction	*Worked by the West Lancashire.*										
Llanelly and Mynydd Mawr, for the year ended 31st October 1893.	12	430	755	32	501	191	290	-	-	3	-
Llangollen and Corwen	*Leased to the Great Western.*										
London and Blackwall	*Leased to the Great Eastern.*										
London and Greenwich	*Leased to the South-Eastern.*										
London and North-Western (Including the "Charnwood Forest," "Cleator and Furness" Joint Line, "Harborne," "Harrow and Stanmore," "Mold and Denbigh Junction," and "Shropshire Union," and half of the "Ashby and Nuneaton," "Birkenhead and Branches," "Shrewsbury and Hereford," "Shrewsbury and Wellington," "Shrewsbury and Welshpool," and "Tenbury," and part of the "North Union," "Preston and Wyre," "West London," "West London Extension," and "Whitehaven, Cleator, and Egremont.")	1,891	1,108,144	1,586,889	437,511	2,370,336	312,386	311,083	40,200	16,330	55,818	34,987
London and South-Western (Including the "North Cornwall," "Plymouth, Devonport, and South-Western Junction," Plymstock Extension of the "Plymouth and Dartmoor," "Salisbury Railway and Market House," "Sidmouth," "Shawford Junction Line" (part of the Didcot, Newbury, and Southampton Railway), "Stonehouse Pool Improvement and Railway," and half of the "Weymouth and Portland," and part of the "West London Extension.")	863	347,768	491,267	146,154	600,768	79,198	123,428	26,677	3,320	12,682	6,431
London, Brighton, and South Coast (including the "Brighton and Dyke," "Hayling Railways," and part of the "Croydon and Oxted," "Victoria Station and Pimlico," "West London Extension," and "Woodside and South Croydon.")	439	205,626	355,733	119,006	354,920	45,284	119,952	24,372	3,101	5,607	9,269
London, Chatham, and Dover (Including the "Mid Kent (Bromley to St. Mary Cray)," "Shortlands and Nunhead," and part of the "Victoria Station and Pimlico.")	188	85,056	182,242	49,485	229,409	38,573	80,862	14,691	2,603	2,850	5,692
Londonderry (Seaham to Sunderland) (Private property.)	7	13,743	7,360	300	1,730	336	664	218	-	2	446
London, Tilbury, and Southend	79	17,346	36,438	7,442	47,969	12,023	11,484	389	1,043	940	913
Longton, Adderley Green, and Bucknall	*Worked by the North Staffordshire.*										
Louth and East Coast	*Leased to the Great Northern.*										

* The short tramway belonging to the Company is used only for the transit of goods between the "Great Eastern" Railway and the Docks.

† Line opened for traffic on 6th March 1893.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	ROLLING STOCK on 31st December 1893.						NAME OF COMPANY.
							Carriages, Waggons, Trucks, &c.					
						Locomotives.	Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
-	52	1,234	1,485	251	83	- -	- -	- -	25	- -	25	Gwendraeth Valleys.
												Halesowen.
												Halifax and Ovenden.
												Halifax High Level.
												Hammersmith and City Junction.
												Harborne.
												Harrow and Stanmore.
												Hayling Railways.
												Helston.
												Horncastle.
												Hounslow and Metropolitan.
45,409	200	179,332	263,766	84,434	68	69	73	28	2,470	64	2,635	Hull, Barnsley, and West Riding Junction Railway and Dock.
-	25	15,875	37,841	21,966	42	8	36	17	157	2	212	Isle of Wight.
-	1,862	20,593	34,272	13,679	60	8	39	- -	165	- -	204	Isle of Wight Central.
												Kettering, Thrapstone, and Huntingdon.
23,134	- -	23,134	36,065	12,931	- -	- -	- -	- -	- -	- -	- -	King's Lynn Docks and Railway.*
												Kington and Eardisley.
71,581	- -	2,625,360	4,416,351	1,790,991	59	1,181	3,204	547	23,361	- -	27,112	Lancashire and Yorkshire.
												Leominster and Kington.
-	211	3,555	3,711	156	96	3	5	1	44	- -	50	Liskeard and Caradon.
												Liskeard and Looe Union Railway and Canal.
-	- -	20,723	30,694	9,971	67	- -	§30	- -	- -	- -	30	Liverpool Overhead.†
												Liverpool, Southport, and Preston Junction.
-	- -	2,202	2,843	641	- -	4	- -	- -	42	3	45	Llanelly and Mynydd Mawr.
												Llangollen and Corwen.
												London and Blackwall.
												London and Greenwich.
171,144	23,500	8,468,328	11,235,860	4,767,532	58	2,735	5,289	2,342	57,767	4,487	69,885	London and North-Western
259,031	31,432	2,128,156	3,783,536	1,655,380	56	636	2,162	1,122	9,270	670	13,224	London and South-Western.
103,882	41,818	1,388,590	2,636,685	1,248,095	53	434	2,152	668	7,319	472	10,611	London, Brighton, and South Coast.
108,468	2,254	809,186	1,439,245	630,059	56	210	909	201	1,967	118	3,195	London, Chatham, and Dover.
-	2,120	26,919	35,077	8,158	77	11	19	2	26	- -	47	Londonderry (Seaham to Sunderland).
7,429	- -	143,416	262,310	118,894	55	36	297	18	952	- -	1,267	London, Tilbury, and Southend.
												Longton, Adderley Green, and Bucknall.
												Louth and East Coast.

‡ Cost of locomotive and generating power.

§ Composite electro-motive carriages.

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Lydd	*Worked by the South-Eastern.*										
Macclesfield Committee	11	5,104	8,576		6,271	1,006	450	14	- -	174	41
Maenclochog	*See* note, page iii.										
Manchester and Milford	41	6,366	5,052	1,100	3,330	1,810	363	173	- -	45	50
Manchester, Sheffield, and Lincolnshire (Including the "Wigan Junction" and part of the "West Riding and Grimsby.")	382	155,765	306,232	77,724	411,830	59,431	60,431	1,723	1,080	6,814	7,204
Manchester, South Junction, and Altrincham	9	17,196	8,693	4,259	19,710	3,645	3,889	1,221	93	129	348
Marlborough	*Worked by the Great Western.*										
Maryport and Carlisle	41	8,721	17,535	5,904	12,576	2,993	3,093	151	- -	47	56
Mawddwy	7	332	546	52	167	171	29	28	- -	1	- -
Mellis and Eye	*Worked by the Great Eastern.*										
Merrybent and Darlington	6	60	51	- -	382	- -	63	- -	- -	- -	- -
Mersey	4	3,943	16,540	2,634	17,071	4,292	2,500	71	21	1	835
Methley Joint Railway	6	3,617	- -	- -	1,805	195	419	3	- -	1	2
Metropolitan (Including half the "Hammersmith and City.")	67	40,187	78,191	28,163	90,072	31,507	46,607	4,287	643	24	4,044
Metropolitan District (Including the "Richmond," "Ealing," and "Fulham" Extensions, and "Hounslow and Metropolitan.")	19	25,498	52,522	12,907	56,427	22,133	26,429	3,234	161	- -	1,162
Metropolitan and Metropolitan District City Lines and Extensions.	2	2,758	13,503		9,749	3,138	1,568	263	37	2	1,173
Mid Kent (Bromley to St. Mary Cray)	*Leased to the London, Chatham, and Dover.*										
Midland (Including the "Barnoldswick," "Kettering, Thrapstone, and Huntingdon," "Manchester, Buxton, Matlock, and Midland Junction," the "Furness and Midland" Joint Line, and half the "Ashby and Nuneaton," "Clifton Extension," the "Great Western and Midland," from Malvern Wells to Malvern Link, "Midland and North-Eastern Committee*" "Otley and Ilkley," "Tottenham and Hampstead Junction," and part of the "Halesowen.")	1,386	688,002	1,429 100	519,519	1,782,672	164,418	236,826	13,655	11,148	35,134	20,120
Midland and Great Northern Railways Joint Committee. (Eastern Section.§)	110	19,912	27,976	6,526	25,699	4,845	1,985	123	- -	521	1,214
Midland and North-Eastern Committee (Swinton to Knottingley.)	*Included in the Returns of the Midland and North-Eastern Companies.*										
Midland and South-Western Junction	55	5,807	8,996	661	6,671	2,450	449	54	- -	146	160
Mid Wales	*Worked by the Cambrian.*										
Milford	*Worked by the Great Western.*										
Milford Haven Dock and Railway	1	85	127	12	111	50	17	- -	- -	- -	- -
Minehead	*Worked by the Great Western.*										
Mold and Denbigh Junction	*Worked by the London and North-Western.*										
Much Wenlock and Severn Junction	*Worked by the Great Western.*										
Muswell Hill and Palace Railway	*Line closed for traffic.*										
Nantwich and Market Drayton	*Worked by the Great Western.*										
Neath and Brecon	40	7,534	3,363	676	4,917	1,837	845	15	- -	80	147
Northampton and Banbury Junction	15	2,512	2,196		2,016	887	166	102	- -	11	50
North and South Western Junction	5	3,962	665		5,558	1,352	285	5	14	3	537
North Cornwall	*Worked by the London and South-Western.*										
North-Eastern (Including the "Great North of England, Clarence, and Hartlepool Junction," "Scarborough and Whitby," "Scarborough, Bridlington, and West Riding Junction," half the "Midland and North-Eastern Committee," and part of the "Otley and Ilkley" Joint Line.)	1,615	651,356	1,233,708	564,171	1,148,281	121,233	228,270	9,633	16,229	11,656	21,218
Northern and Eastern	*Leased to the Great Eastern.*										
North London	12	40,596	98,124	30,450	89,613	16,867	37,546	1,625	88	80	738
North Staffordshire (Including the "Longton, Adderley Green, and Bucknall.")	193	79,098	93,302	25,807	106,449	19,181	17,230	1,385	1,175	3,329	471
North Wales (Narrow Gauge)	12	1,024	1,050	369	827	351	41	39	- -	3	26
Nottingham and Grantham Railway and Canal	*Leased to the Great Northern.*										
Nottingham Suburban	*Worked by the Great Northern.*										
Oldbury	*Worked by the Great Western.*										
Oldham, Ashton-under-Lyne, and Guide Bridge Junction.	6	8,229	3,756		6,192	856	385	19	106	24	150

* Locomotive power supplied by the Manchester, Sheffield, and Lincolnshire Railway Company.
‡ Towards this expenditure 54,136*l.* was received for working other Companies' traffic.
§ The line was purchased by the Midland and Great Northern Companies from the Eastern and Midlands Company which worked the line for the first six months of 1893.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	Rolling Stock on 31st December 1893. Locomotives.	Carriages, Waggons, Trucks, &c. Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passengr Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	Name of Company.
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*Lydd.*
- -	112	21,748	27,772	6,024	78	Locomotive power and rolling stock provided by the "Manchester, Sheffield, and Lincolnshire" and "North Staffordshire" Railway Companies.						Macclesfield Committee.
												Maenclochog.
- -	193	17,982	20,331	2,349	88	6	16	4	114	3	137	Manchester and Milford.
150,690	46,034	1,284,958	2,160,618	875,660	59	715	948	158	17,933	- -	19,039	Manchester, Sheffield, and Lincolnshire.
- - - -		59,183	122,706	63,523	48	—*	133	1	7	15	156	Manchester, South Junction, and Altrincham.
												Marlborough.
- -	436	51,512	103,522	52,010	50	27	39	15	1,838	9	1,901	Maryport and Carlisle.
- - - -		1,326	1,214	112 Deficiency.	109	2	4	- -	- -	- -	4	Mawddwy.
												Mellis and Eye.
- - - -		556	598	42	- -	2	- -	- -	4	- -	4	Merrybent and Darlington.
- -	13,343	61,251	74,954	13,703	82	18	97	- -	4	3	104	Mersey.
- -	8	6,050	11,023	4,973	- -	Locomotive power and rolling stock supplied by the Companies working the traffic.						Methley Joint Railway.
- -	300	324,025	737,787	413,762	44	71	354	9	146	- -	509	Metropolitan.
- -	45	200,518	435,005	234,487	46	54	368	- -	27	6	401	Metropolitan District.
- - - -		32,191	36,358	4,167	- -	The traffic is carried in the trains of the Companies using the line.						Metropolitan and Metropolitan District City Lines and Extensions.
												Mid Kent (Bromley to St. Mary Cray).
3,449	- -	4,904,043	8,407,592	3,503,549	58	2,217	2,994	1,659	112,712	- -	117,365	Midland.
- -	4,272	93,073	88,335	4,738 Deficiency.	105	39	54	21	688	50	813	Midland and Great Northern Railways Joint Committee.
												Midland and North-Eastern Committee.
- -	1,659	27,053	31,237	4,184	87	7	17	16	118	- -	151	Midland and South-Western Junction.
												Mid Wales.
												Milford.
- - - -		402	436	34	- -	1	- -	- -	15	- -	15	Milford Haven Dock and Railway.
												Minehead.
												Mold and Denbigh Junction.
												Much Wenlock and Severn Junction.
												Muswell Hill and Palace Railway.
												Nantwich and Market Drayton.
- -	4,397†	23,811	34,321	10,510	69	6	7	4	47	3	61	Neath and Brecon.
- - - -		7,940	8,450	510	94	Locomotive power and rolling stock supplied by the "London and North-Western" Company.						Northampton and Banbury Junction.
- - - -		12,381	3,444	8,937 Deficiency.	- -	- -	- -	- -	- -	- -	- -	North and South Western Junction.
												North Cornwall.
107,064	- -	4,112,819	7,195,383	3,082,564	57	1,799	2,540	943	86,217	- -	89,700	North-Eastern.
												Northern and Eastern.
3,920	6,698	326,345‡	493,336	227,127	55	105	573	113	322	211	1,219	North London.
44,579	6,279	398,285	774,971	376,686	51	142	276	117	5,281	78	5,752	North Staffordshire.
- - - -		3,730	4,232	502	88	3	12	- -	134	- -	146	North Wales (Narrow Gauge).
												Nottingham and Grantham Railway and Canal.
												Nottingham Suburban.
												Oldbury.
- -	533	25,250	28,100	2,850	90	Provided by the "Manchester, Sheffield, and Lincolnshire" and "London and North-Western" Railway Companies.						Oldham, Ashton-under-Lyne, and Guide Bridge Junction.

† Amount paid to "Midland" Company for working expenses on traffic hauled by the Company over 29 miles of the line.

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Pembroke and Tenby	29	2,705	4,567	1,179	2,886	1,856	345	560	- -	13	50
Penarth Extension	*Leased to the Taff Vale.*										
Penarth Harbour, Dock, and Railway	*Leased to the Taff Vale.*										
Plymouth and Dartmoor§ ††	11	- -	- -	- -	- -	77	23	- -	- -	- -	- -
Plymouth, Devonport, and South-Western Junction	*Worked by the London and South-Western.*										
Pontypridd, Caerphilly, and Newport	*See* note, page iii.										
Portmadoc, Croesor, and Beddgelert	5	109	150*	- -	- -	77	19	- -	- -	- -	- -
Princetown	*Worked by the Great Western.*										
Ramsey and Somersham Junction	*Worked by the Great Eastern.*										
Ravenglass and Eskdale	7	253	330	12	138	195	5	34	- -	- -	41
Redruth and Chasewater	10	403	694	218	1,741	457	91	- -	- -	- -	- -
Rhondda and Swansea Bay	19	2,014	4,509	989	5,846	2,062	1,439	14	- -	7	84
Rhymney	46	16,690	46,385	7,694	24,118	7,214	7,516	120	- -	55	652
Ross and Monmouth	*Worked by the Great Western.*										
Rowrah and Kelton Fell Mineral	3	376	268	- -	76	389†	27	- -	- -	- -	36
Royston and Hitchin	*Leased to the Great Northern.*										
St. Austell and Pentewan Railway, Harbour, and Dock, for the year ended 29th September 1893.	3	346	244	306	429	205	92	- -	- -	- -	- -
Salisbury Railway and Market House	*Worked by the London and South-Western.*										
Saundersfoot Railway and Harbour	4	40	80	100	47	142	40	- -	- -	- -	- -
Scarborough and Whitby	*Worked by the North-Eastern.*										
Scarborough, Bridlington, and West Riding Junction.	*Worked by the North-Eastern.*										
Severn and Wye and Severn Bridge	37	6,800	7,504	705	5,242	2,025	1,308	228	- -	79	176
Sheffield and Midland Committee	29	26,004	40,543	15,328‡	18,290	2,551	2,297	215	354	986	79
Shortlands and Nunhead	*Worked by the London, Chatham, and Dover.*										
Shrewsbury and Hereford	*Leased to the Great Western and London and North-Western.*										
Shropshire Union Railways and Canal	*Leased to the London and North-Western.*										
Sidmouth	*Worked by the London and South-Western.*										
Snailbeach District	3	106	50	39	100	104	9	- -	- -	- -	- -
Somerset and Dorset, for the year ended 31st October 1893. (Including the "Bridgwater." The lines are worked by a Joint Committee of the "London and South-Western" and "Midland" Companies.)	101	23,885	50,127	12,737	32,264	5,740	3,544	314	48	1,032	266
South-Eastern (Including the "Cranbrook and Paddock Wood (Light)," "London and Greenwich," and "Lydd," and part of the "Croydon and Oxted" and "Woodside and South Croydon" joint lines.)	406	137,227	293,056	97,904	353,590	79,062	127,888	17,312	8,714	6,254	11,978
Southport and Cheshire Lines Extension	*Worked by the Cheshire Lines Committee.*										
South Wales Mineral, for the year ended 30th September 1893.	13	3,217	2,736	- -	4,368	698	314	- -	- -	- -	255
Southwold	9	876	773	153	858	329	26	10	- -	- -	- -
Staines and West Drayton	*Worked by the Great Western.*										
Stamford and Essendine	*Worked by the Great Northern.*										
Stocksbridge	2	342	432	- -	103	38	177	- -	- -	- -	59
Stonehouse Pool Improvement and Railway	*Worked by the London and South-Western.*										
Sutton and Willoughby	*Worked by the Great Northern.*										
Swansea and Mumbles	7	1,103	1,267	1,023	1,722	766	380	114	50	- -	- -
Taff Vale (Including the "Aberdare," "Cowbridge and Aberthaw," "Penarth Extension," and "Penarth Harbour, Dock, and Railway.")	119	46,806	126,210	17,631	92,901	21,289	33,536	770	1,550	903	3,791

* Cost of horse power. † Including payment of Secretary's salary for former years. ‡ Hire of carriages and waggons.
§ The return is exclusive of the Plymstock Extension, which line is worked by the "London and South-Western" Company.
†† Mineral railway for the use of which a toll is paid.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	Rolling Stock on 31st December 1893. Locomotives.	Carriages, Waggons, Trucks, &c. Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	Name of Company.
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
- -	125	14,286	27,643	13,357	52	7	20	3	198	3	224	Pembroke and Tenby.
												Penarth Extension.
												Penarth Harbour, Dock, and Railway.
- -	- -	100	712	612	- -	- -	- -	- -	- -	- -	- -	Plymouth and Dartmoor.§
												Plymouth, Devonport, and South Western Junction.
												Pontypridd, Caerphilly, and Newport.
- -	31	386	446	60	- -	- -	- -	- -	- -	- -	- -	Portmadoc, Croesor, and Beddgelert.
												Princetown.
												Ramsey and Somersham Junction.
- -	4	1,012	1,029	17	98	2	3	1	19	- -	23	Ravenglass and Eskdale.
- -	296	3,900	4,297	397	91	3	- -	- -	90	- -	90	Redruth and Chasewater.
- -	- -	16,964	28,975	12,011	59	10	26	8	285	10	329	Rhondda and Swansea Bay.
- -	221	110,665	207,031	96,366	53	72	67	10	653	40	770	Rhymney.
												Ross and Monmouth.
- -	1	1,173	1,503	330	78	- -	- -	- -	- -	- -	- -	Rowrah and Kelton Fell Mineral.
												Royston and Hitchin.
- -	38	1,660	2,383	723	70	2	- -	- -	42	- -	42	St. Austell and Pentewan Railway Harbour, and Dock.
												Salisbury Railway and Market House.
47	- -	496	535	39	- -	1	- -	- -	70	- -	70	Saundersfoot Railway and Harbour.
												Scarborough and Whitby.
												Scarborough, Bridlington, and West Riding Junction.
857	922	25,846	39,812	13,966	65	12	17	3	2	62	84	Severn and Wye and Severn Bridge.
- -	561	107,208	143,305	36,097	75	Locomotive power and rolling stock provided by the "Manchester, Sheffield, and Lincolnshire" and "Midland" Railway Companies.						Sheffield and Midland Committee.
												Shortlands and Nunhead.
												Shrewsbury and Hereford.
												Shropshire Union Railways and Canal.
												Sidmouth.
- -	20	428	369	59 Deficiency.	116	2	- -	- -	51	1	52	Snailbeach District.
- -	5,134	135,091	168,902	33,811	80	61	127	50	967	66	1,210	Somerset and Dorset.
83,903	25,766	1,242,654	2,315,858 ¶	1,073,204 ¶	54	392	1,561	570	5,282	410	7,823	South-Eastern.
												Southport and Cheshire Lines Extension.
- -	- -	11,588	11,497	91 Deficiency.	101	6	- -	- -	14	- -	14	South Wales Mineral.
- -	- -	3,025	3,659	634	83	3	6	- -	17	3	26	Southwold.
												Staines and West Drayton.
												Stamford and Essendine.
- -	- -	1,151	2,562	1,411	45	1	- -	- -	- -	- -	- -	Stocksbridge.
												Stonehouse Pool Improvement and Railway.
												Sutton and Willoughby.
- -	877	7,302	12,400	5,098	59	5	34	2	4	- -	40	Swansea and Mumbles.
17,001	27,393	389,781	722,836	333,055	54	190	196	54	2,361	222	2,833	Taff Vale.

¶ Exclusive of 15,454*l.* received from the London, Brighton, and South Coast Railway Company in respect of the greater use made by that Company of the lines between London and Redhill.

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Talyllyn, for the year ended 30th September 1893	7	362	344	244	313	176	107	- -	- -	1	- -
Teign Valley	*Worked by the Great Western.*										
Tenbury	*Worked by the Great Western and London and North-Western.*										
Thetford and Watton	*Worked by the Great Eastern.*										
Tiverton and North Devon	*Worked by the Great Western.*										
Tottenham and Hampstead Junction	*Worked by the Great Eastern and Midland.*										
Vale of Llangollen	*Worked by the Great Western.*										
Van	6	Line practically closed for traffic.									
Victoria Station and Pimlico	*Line used by the Great Western, London and North-Western, London, Brighton, and South Coast, and London, Chatham, and Dover.*										
Wainfleet and Firsby	*Worked by the Great Northern.*										
Watton and Swaffham	*Worked by the Great Eastern.*										
Wenlock	*Worked by the Great Western.*										
West Cornwall Railway	*See under Great Western.*										
West Lancashire (Including "Liverpool, Southport, and Preston Junction.")	25	5,340	8,080	1,510	9,949	2,069	683	34	- -	50	185
West London	*Leased to the West London Extension.*										
West London Extension	*Line worked by the Great Western, London and North-Western, London and South-Western, and London, Brighton, and South Coast.*										
West Riding and Grimsby	*Included in the returns of the Great Northern and Manchester, Sheffield, and Lincolnshire.*										
West Somerset	*Leased to the Great Western.*										
West Somerset Mineral	12*	556	652	76	691		42	1	- -	- -	- -
Weymouth and Portland	*Worked by the Great Western and London and South-Western.*										
Wigan Junction	*Worked by the Manchester, Sheffield, and Lincolnshire.*										
Wirral	11	2,575	7,028	1,292	3,785	1,621	571	1,021	1,112	- -	200
Woodside and South Croydon Joint Committee	*Included in the returns of the London, Brighton, and South Coast and South-Eastern.*										
Woodstock	3	202			1,612		26	2	- -	- -	140
Wrexham, Mold, and Connah's Quay (Including the "Buckley.")	28	4,683	6,238	1,029	6,906	2,954	1,107	26	- -	28	35
Wye Valley	*Worked by the Great Western.*										
TOTAL ENGLAND AND WALES	14,440	6,222,574	10,578,459	3,275,745	12,296,925	1,691,968	2,289,530	264,775	108,453	224,762	205,082
					57,158						

* Of this length 5 miles are open for goods and mineral traffic only.
‡ Including 16 electric locomotives.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	ROLLING STOCK on 31st December 1893.						NAME OF COMPANY
							Carriages, Waggons, Trucks, &c.					
						Locomotives.	Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
- -	- -	1,607	1,428	179 Deficiency.	113	2	4	1	114	- -	119	Talyllyn.
												Teign Valley.
												Tenbury.
												Thetford and Watton.
												Tiverton and North Devon.
												Tottenham and Hampstead Junction.
												Vale of Llangollen.
- -												Van.
												Victoria Station and Pimlico.
												Wainfleet and Firsby.
												Watton and Swaffham.
												Wenlock.
												West Cornwall Railway.
- -	22	27,922	27,485	437 Deficiency.	102	9	43	16	297	- -	356	West Lancashire.
												West London.
												West London Extension.
												West Riding and Grimsby.
												West Somerset.
- -	188	2,206	6,877	4,671	- -	2	3	- -	82	3	88	West Somerset Mineral.
												Weymouth and Portland.
												Wigan Junction.
- -	3	19,208	30,119	10,911	64	8	35	- -	58	- -	93	Wirral.
												Woodside and South Croydon Joint Committee.
- -	- -	1,982	897	1,085 Deficiency.	221	Locomotive power and rolling stock supplied by the Great Western Company.						Woodstock.
604	774	24,384	44,823	20,439	54	16	26	9	187	5	227	Wrexham, Mold, and Connah's Quay.
												Wye Valley.
1,725,480	320,516	39,207,291 §	68,252,504 †	29,045,213 †	57	15,372 ‡	34,793	12,590	447,977	10,996	506,356	Total England and Wales.

† Exclusive of 15,454*l.* received by the South-Eastern Railway Company from the London, Brighton, and South Coast Railway Company. *See* note, page 77.
§ Exclusive of 54,136*l.* received by the North London Railway Company for working other lines. *See* note page 74.

No. 3.—Working Expenditure, Net Receipts,

The financial year of the Scotch Railway Companies, except

NAME OF COMPANY	Length of line in Miles open on 31st January 1894.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Anstruther and St. Andrews	*Worked by the North British.*										
Arbroath and Forfar	*Leased to the Caledonian.*										
Ayr and Maybole	*Leased to the Glasgow and South-Western.*										
Caledonian (Including the "Arbroath and Forfar," "Callander and Oban," "Cathcart District," "Crieff and Comrie," "Dundee and Newtyle," "Greenock and Wemyss Bay, to 31st July*" "Killin," "Lanarkshire and Ayrshire," "Solway Junction," part of the "Kilsyth and Bonnybridge," and half the "Glasgow and Kilmarnock" and "Glasgow and Paisley" Joint Lines.)	878	330,754	453,702	186,467	545,411	71,550	81,243	8,084	4,104	6,177	7,938
Callander and Oban	*Worked by the Caledonian.*										
Cathcart District	*Worked by the Caledonian.*										
City of Glasgow Union	7	5,183	-	-	9,741	2,137	4,276	148	38	46	175
Crieff and Comrie	*Worked by the Caledonian.*										
Dundee and Newtyle	*Leased to the Caledonian.*										
Edinburgh and Bathgate	*Leased to the North British.*										
Eyemouth	*Worked by the North British.*										
Findhorn	Line closed since 30th January 1869.										
Forth and Clyde Junction	*Leased to the North British.*										
Forth Bridge	*Worked by the North British.*										
Glasgow and South-Western (Including the "Ayr and Maybole," "Kilmarnock and Troon," and half the "Glasgow and Kilmarnock" and "Glasgow and Paisley" Joint Lines.)	385	110,923	189,562	75,945	227,338	26,105	36,096	2,657	1,460	1,854	2,566
Glasgow, Yoker, and Clydebank	*Worked by the North British.*										
Great North of Scotland (Including the "Buckie Extension.")	316	31,086	55,628	13,320	58,873	10,935	11,861	989	1,143	291	834
Highland, for the year ended 28th February 1894	445	50,824	77,129	20,436	64,053	11,055	12,506	1,851	1,261	1,482	823
Killin	*Worked by the Caledonian.*										
Kilmarnock and Troon	*Leased to the Glasgow and South-Western.*										
Kilsyth and Bonnybridge	*Worked by the Caledonian and North British.*										
Lanarkshire and Ayrshire	*Worked by the Caledonian.*										
Newport	*Leased to the North British.*										
North British (Including the "Anstruther and St. Andrews," "Edinburgh and Bathgate," "Eyemouth," "Forth and Clyde Junction," "Forth Bridge," "Glasgow, Yoker, and Clydebank," "Newport," and part of the "Kilsyth and Bonnybridge.")	1,102	305,756	456,741	181,586	525,484	60,612	67,114	8,024	4,469	5,199	9,439
Portpatrick and Wigtownshire Joint Committee	82	11,448	18,012	2,568	9,349	1,272	779	169	20	51	269
Solway Junction	*Leased to the Caledonian.*										
TOTAL SCOTLAND	3,215	845,974	1,250,774	480,322	1,440,249	183,666	213,875	21,922	12,495	15,100	22,044

* Amalgamated with the Caledonian as from 1st August 1893.

and Rolling Stock, SCOTLAND, in 1893.

WHEN OTHERWISE STATED, ENDED ON THE 31ST JANUARY 1894.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	Rolling Stock on 31st January 1894. Locomotives.	Carriages, Waggons, Trucks, &c. Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	Name of Company.
£	£	£	£	£		No.	No.	No.	No.	No.	No.	
												Anstruther and St. Andrews.
												Arbroath and Forfar.
												Ayr and Maybole.
34,495	54,398	1,784,328	3,462,070	1,677,747	52	698	1,362	441	51,882	694	54,379	Caledonian.
												Callander and Oban.
												Cathcart District.
- -	1,669	23,413	81,199	57,786	- -	The traffic is carried in the trains of the Companies using the line.						City of Glasgow Union.
												Crieff and Comrie.
												Dundee and Newtyle.
												Edinburgh and Bathgate.
												Eyemouth.
												Findhorn.
												Forth and Clyde Junction.
												Forth Bridge.
46,382	7,365	728,233	1,289,319	561,086	56	335	810	303	13,795	338	15,246	Glasgow and South-Western.
												Glasgow, Yoker, and Clydebank.
- -	7,959	192,919	392,663	199,744	49	92	345	281	2,628	44	3,298	Great North of Scotland.
- -	9,592	251,012	472,466	221,454	53	101	257	112	2,556	61	2,986	Highland.
												Killin.
												Kilmarnock and Troon.
												Kilsyth and Bonnybridge.
												Lanarkshire and Ayrshire.
												Newport.
24,351	36,349	1,685,124	3,375,392	1,690,268	50	698	1,771	944	50,335	146	53,196	North British.
- -	3,974	47,911	57,609	9,698	83	2†	1	3	29	- -	33†	Portpatrick and Wigtownshire Joint Committee.
												Solway Junction.
105,208	121,306	4,712,935	9,130,718	4,417,783	52	1,926	4,546	2,084	121,225	1,283	129,138	Total Scotland.

† The rolling stock for the Portpatrick section of the line is provided by the "Caledonian" and "Glasgow and South-Western" Companies.

No. 3.—Working Expenditure, Net Receipts,

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Ballycastle	16	673	1,130	197	693	328	60	- -	- -	8	- -
Belfast and County Down	76	14,486	14,797	4,785	15,582	6,068	1,176	- -	- -	61	213
Belfast and Northern Counties (Including the "Derry Central," "Draperstown," and "Limavady and Dungiven.")	249	32,759	41,412	15,435	41,340	12,226	6,099	- -	9	334	651
City of Dublin Junction	*Worked by the Dublin, Wicklow, and Wexford.*										
Clara and Banagher	*Worked by the Great Southern and Western of Ireland.*										
Clonakilty Extension	*Worked by the Cork, Bandon, and South Coast.*										
Cork and Macroom Direct	25	1,942	2,330	1,311	2,857	683	468	- -	- -	7	
Cork, Bandon, and South Coast (Including the "Baltimore Extension," "Bantry Extension," "Bantry Bay Extension," "Clonakilty Extension," and "Ilen Valley.")	94	11,808	11,400	2,922	10,477	1,830	1,386	- -	- -	33	95
Cork, Blackrock, and Passage	6	834	2,205	195	1,856	799	588	- -	- -	1	17
Derry Central	*Worked by the Belfast and Northern Counties.*										
Donegal, for 10 months ended 1st November 1893* (Including the "Donegal and Killybegs."	51	2,371	2,086	259	1,650	695	157	- -	- -	52	56
Draperstown	*Worked by the Belfast and Northern Counties.*										
Dublin and Kingstown	*Leased to the Dublin, Wicklow, and Wexford.*										
Dublin, Wicklow, and Wexford (Including the "City of Dublin Junction" and "Dublin and Kingstown.")	144	32,450	34,904	12,097	36,712	8,749	10,809	- -	383	168	2,869
Dundalk, Newry, and Greenore	26	4,928	2,619	473	6,230	413	254	- -	- -	117	17
Enniskillen, Bundoran, and Sligo	*Worked by the Great Northern of Ireland.*										
Fermoy and Lismore	*Worked by the Waterford, Dungarvan and Lismore.*										
Great Northern of Ireland (Including the "Enniskillen, Bundoran, and Sligo.")	522	98,827	94,750	27,393	111,560	19,772	16,862	- -	291	959	2,112
Great Southern and Western of Ireland‡ (Including the "Clara and Banagher," "Fermoy and Lismore,"† "Headford and Kenmare," "Killorglin and Valentia," and "Mitchelstown and Fermoy.")	604	93,096	121,321	37,646	133,730	18,368	27,885	- -	1,710	2,407	1,656
Ilen Valley	*Worked by the Cork, Bandon, and South Coast.*										
Kilkenny Junction	*Worked by the Waterford and Central Ireland.*										
Letterkenny	*Worked by the Londonderry and Lough Swilly.*										
Limavady and Dungiven	*Worked by the Belfast and Northern Counties.*										
Limerick and Kerry	*Worked by the Waterford and Limerick.*										
Listowel and Ballybunion	9	413	548	247	397	156	12	- -	- -	- -	- -
Londonderry and Lough Swilly (Including "Letterkenny.")	31	2,027	2,445	229	2,540	945	93	- -	200	19	83

* The dates to which the accounts of the Company are made up have been changed from 30th June and 31st December to the 1st May and 1st November.
† Opened for traffic on 18th August 1893.

nd Rolling Stock, IRELAND, in 1893.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	Rolling Stock on 31st December 1893. Locomotives.	Carriages, Waggons, Trucks, &c. Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	Name of Company.
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
-	26	3,115	4,680	1,565	67	3	9	2	59	- -	70	Ballycastle.
2,952	315	60,935	113,770	52,835	54	26	141	19	487	36	683	Belfast and County Down.
-	438	150,703	265,048	114,345	57	65	184	95	1,941	52	2,272	Belfast and Northern Counties.
												City of Dublin Junction.
												Clara and Banagher.
												Clonakilty Extension.
-	- -	9,634	15,681	6,047	61	4	14	4	83	- -	101	Cork and Macroom Direct.
-	725	40,876	72,195	31,319	57	16	38	10	307	6	361	Cork, Bandon, and South Coast.
8,754	120	15,369	21,829	6,460	70	3	14	- -	4	- -	18	Cork, Blackrock, and Passage.
												Derry Central.
-	631	7,957	13,045	5,088	61	9	33	12	118	27	190	Donegal.
												Draperstown.
												Dublin and Kingstown.
-	1,025	140,166	268,791	128,625	52	54	202	52	643	22	919	Dublin, Wicklow, and Wexford.
-	119	15,170	13,731	1,439 Deficiency	110	5	12	10	214	7	243	Dundalk, Newry, and Greenore.
												Enniskillen, Bundoran, and Sligo.
												Fermoy and Lismore.
-	93	372,619	749,285	376,666	50	137	315	243	3,571	132	4,261	Great Northern of Ireland.
-	2,609	440,428	824,452	384,024	53	178	322	265	4,621	- -	4,608	Great Southern and Western of Ireland.
												Ilen Valley.
												Kilkenny Junction.
												Letterkenny.
												Limavady and Dungiven.
												Limerick and Kerry.
-	40	1,813	2,283	470	79	3	3	3	28	2	46	Listowel and Ballybunion.
-	- -	8,581	16,387	7,806	52	6	18	8	112	- -	138	Londonderry and Lough Swilly

‡ The "Fermoy and Lismore" Railway was worked for two months by the "Great Southern and Western" Company and for the remainder of the year by the "Waterford Dungarvon and Lismore" Company. The figures here given include the statistics of the working expenditure of the "Fermoy and Lismore" line for the two months. The length of the "Fermoy and Lismore" line is included in the return of the "Waterford Dungarvan and Lismore" Company.

NAME OF COMPANY.	Length of Line in Miles open on 31st December 1893.	WORKING EXPENDITURE. Maintenance of Way, Works, &c.	Locomotive Power (including Stationary Engines).	Repairs and Renewals of Carriages and Waggons.	Traffic Expenses (Coaching and Merchandise).	General Charges.	Rates and Taxes.	Government Duty.	Compensation for Personal Injuries, &c.	Compensation for Damage and Loss of Goods.	Legal and Parliamentary Expenses.
	No.	£	£	£	£	£	£	£	£	£	£
Midland Great Western of Ireland (Including the "Ballinrobe and Claremorris" and "Loughrea and Attymon.")	454	55,272	77,161	20,445	75,603	12,553	11,129	- -	876	523	2,963
Rathkeale and Newcastle Junction	*Worked by the Waterford and Limerick.*										
Sligo, Leitrim, and Northern Counties	43	3,476	4,073	687	4,385	942	137	- -	- -	- -	58
Southern	*Worked by the Waterford and Limerick.*										
Tralee and Fenit	*Worked by the Waterford and Limerick.*										
Waterford and Central Ireland, for the year ended 29th September 1893. (Including the "Central Ireland" and "Kilkenny Junction.")	67	6,385	5,462	1,695	4,860	2,236	702	- -	- -	19	20
Waterford and Limerick (Including the "Athenry and Ennis Junction to 27th July§," "Athenry and Tuam to 30th September¶," "Limerick and Kerry," "Rathkeale and Newcastle Junction," "Southern," and "Tralee and Fenit.")	279	34,441	28,869	9,932	34,203	7,938	5,765	- -	10	693	1,514
Waterford and Tramore	7	569	1,537	243	579	251	84	- -	- -	- -	- -
Waterford and Wexford	9	Line practically closed for traffic.									
Waterford, Dungarvan, and Lismore (Including the "Fermoy and Lismore," for the ten months ended 31st December, 1893.	58	7,610	3,619	1,069	4,583	1,111	176	- -	- -	- -	101
TOTAL	2,761	404,367	452,668	137,260	489,837	96,063	83,842	- -	3,479	5,401	12,661

LIGHT RAILWAYS AUTHORISED UNDE

Ballinisearthy and Timoleague Junction	*See* Timoleague and Courtmacsherry Extension, &c.										
Ballinrobe and Claremorris	*Worked by the Midland Great Western of Ireland.*										
Bessbrook and Newry Tramway	3	97	138	283	269	415	20	- -	6	6	29
Carrickfergus Harbour Junction	1	19	43	- -	- -	65	22	- -	- -	- -	- -
Cavan, Leitrim, and Roscommon Light Railway and Tramway, for the year ended 1st November 1893.	48	1,984	2,566	565	2,271	535	128	- -	2	1	28
Clogher Valley Tramway, for the year ended 30th September 1893.	37	1,148	2,481	287	1,266	868	62	- -	- -	12	16
Cork and Muskerry	18	1,555	2,216	412	1,804	636	43	- -	- -	10	42
Donoughmore Extension	9	140	335	15	129	98	6	- -	- -	- -	- -
Loughrea and Attymon	*Worked by the Midland Great Western of Ireland.*										
Mitchelstown and Fermoy	*Worked by the Great Southern and Western of Ireland.*										
Schull and Skibbereen	15	1,677	927	267	442	346	34	- -	- -	- -	- -
South Clare, for the year ended 31st October 1893	26	880	1,474	186	1,420	670	66	- -	- -	- -	69
Timoleague and Courtmacsherry Extension and Ballinisearthy and Timoleague Junction.	9	623	482	58	460	1,122	65	- -	- -	- -	- -
Tralee and Dingle, for the year ended 30th November 1893.	37	2,799	4,291	346	1,313	623	47	- -	2,872	140	1,543
West Clare, for the year ended 31st October 1893	27	2,902	2,076	609	2,398	849	56	- -	1	12	322
TOTAL LIGHT RAILWAYS	230	13,824	17,029	3,028	11,772	6,227	549	- -	2,881	181	2,056
GRAND TOTAL, IRELAND	2,991	418,191	469,697	140,288	501,609	102,290	84,391	- -	6,360	5,582	14,717

* Electro-motive cars. † Hire of rolling stock. ‡ Including 3,812*l.* for hire and part purchase of rolling stock.

Steamboat, Canal, and Harbour Expenses.	Miscellaneous Working Expenditure not included in the foregoing.	Total Working Expenditure.	Total Receipts, as given in the Traffic Return, No. 2.	Net Receipts.	Proportion per Cent. of Expenditure to Receipts.	Rolling Stock on 31st December 1893. Carriages, Waggons, Trucks, &c. Locomotives.	Carriages used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all kinds used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons used on the Railway, not included in the preceding Columns.	Total Number of Vehicles of all descriptions for Conveyance of Passengers, Live Stock, Ballast, &c.	Name of Company.
£	£	£	£	£		*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
4,858	- -	261,383	525,902	264,519	50	114	172	200	2,402	108	2,882	Midland Great Western of Ireland.
												Rathkeale and Newcastle Junction.
-	1,200†	14,958	16,657	1,699	90	5	15	6	101	- -	122	Sligo, Leitrim, and Northern Counties.
												Southern.
												Tralee and Fenit.
- -	1,520	22,899	43,645	20,746	52	10	28	17	191	- -	236	Waterford and Central Ireland.
- -	1,307	124,672	203,252	78,580	61	46	79	43	1,089	28	1,239	Waterford and Limerick.
- -	- -	3,263	6,743	3,480	48	4	15	3	8	2	28	Waterford and Tramore.
												Waterford and Wexford.
- -	3,597‡	21,866	22,874	1,008	96	7	18	3	142	- -	163	Waterford, Dungarvan, and Lismore.
16,564	14,265	1,716,407	3,200,250	1,483,843	54	695	1,637	1,000	15,521	422	18,580	Total.

THE TRAMWAYS (IRELAND) ACTS, 1860 to 1883.

												Balliniscarthy and Timoleague Junction.
												Ballinrobe and Claremorris.
- -	63	1,326	1,488	162	89	2*	1	- -	28	1	30	Bessbrook and Newry Tramway.
- -	- -	149	95	54 Deficiency.	- -	- -	- -	- -	- -	- -	- -	Carrickfergus Harbour Junction.
- -	102	8,183	8,428	245	97	8	12	10	107	6	135	Cavan, Leitrim, and Roscommon Light Railway and Tramway.
- -	125	6,265	6,401	136	98	6	13	6	70	2	91	Clogher Valley Tramway.
- -	561	7,279	9,027	1,748	81	5	17	5	54	- -	76	Cork and Muskerry.
- -	- -	723	562	161 Deficiency.	- -	1	2	1	12	- -	15	Donoughmore Extension.
												Loughrea and Attymon.
												Mitchelstown and Fermoy.
- -	41	3,734	2,030	1,704 Deficiency.	184	4	6	4	24	21	55	Schull and Skibbereen.
- -	- -	4,765	4,188	577 Deficiency.	114	3	6	- -	21	- -	27	South Clare.
- -	53	2,863	1,489	1,374 Deficiency.	192	2	3	1	20	- -	24	Timoleague and Courtmacsherry Extension and Balliniscarthy and Timoleague Junction.
- -	- -	13,974	4,647	9,327 Deficiency.	- -	4	10	- -	32	2	44	Tralee and Dingle.
- -	- -	9,225	10,065	840	92	4	12	4	66	2	84	West Clare.
- -	945	58,486	48,420	10,066 Deficiency.	121	39	82	31	434	34	581	Total Light Railways.
16,564	15,210	1,774,893	3,248,670	1,473,777	55	734	1,719	1,031	15,955	456	19,161	Grand Total, Ireland.

§ Amalgamated with the Waterford and Limerick as from 28th July 1893. ¶ Sold to the Waterford and Limerick as from 1st October 1893.

RAILWAY RETURNS.—1893.

APPENDIX A.—SEASON AND PERIODICAL TICKETS.

RECEIPTS of RAILWAY COMPANIES in ENGLAND and WALES, SCOTLAND, and IRELAND from FIRST, SECOND, and THIRD CLASS (including Workmen's Weekly Tickets), SEASON and PERIODICAL TICKETS issued in 1893.

NOTE.—The Board of Trade are indebted to the Railway Companies for having voluntarily supplied the information given in the following Table.

APPENDIX A.—RECEIPTS from SEASON and PERIODICAL TICKETS in 1893.—ENGLAND AND WALES.

Note.—The Returns for worked or leased lines are included in those of the working Companies.

Name of Company.	Receipts from Season and Periodical Tickets, including Workmen's Weekly Tickets.			
	First Class.	Second Class.	Third Class (including Workmen's Weekly Tickets).	Total.
	£	£	£	£
Barry	64	164	303	531
Bishop's Castle	—	—	—	—
Brecon and Merthyr Tydfil Junction	34	88	27	149
Cambrian (Including leased and worked lines, for names of which see p. 48.)	573	91	811	1,475
Cheshire Lines Committee (Including leased and worked lines, for names of which see p. 48.)	Cannot be given.			
City and South London	—	—	*1,409	*1,409
Cleator and Workington Junction	36	21	21	78
Cockermouth, Keswick, and Penrith	124	159	393	676
Colne Valley and Halstead	32	—	39	71
Corris	—	—	123	123
Dover and Deal (Joint Committee)	Cannot be given.			
Easingwold	2	—	13	15
East and West Junction and Stratford-upon-Avon, Towcester, and Midland Junction Joint Committee.	12	9	24	45
East London (Joint Committee)	195	524	5	724
Festiniog	33	55	1,344	1,432
Furness	1,069	1,174	1,373	3,616
Garstang and Knot End	—	—	—	—
Glyn Valley Tramway	10	—	10	20
Golden Valley	—	—	—	—
Great Eastern (Including leased and worked lines, for names of which see p. 50.)	80,799	124,654	22,446	227,899
Great Marlow	17	48	—	65
Great Northern (Including leased and worked lines, for names of which see p. 50.)	42,198	74,360	28,922	145,480
Great Western (Including leased and worked lines, for names of which see p. 50.)	43,289	66,495	8,372	118,156
Hull, Barnsley, and West Riding Junction Railway and Dock	128	—	378	506
Isle of Wight (Including leased and worked lines, for names of which see p. 52.)	123	343	112	578
Isle of Wight Central (Including leased and worked lines, for names of which see p. 52.)	326	844	137	1,307
Lancashire and Yorkshire (Including leased and worked lines, for names of which see p. 52.)	80,609	29,480	110,324	220,413
Liskeard and Caradon	—	—	—	—
London and North-Western (Including leased and worked lines, for names of which see p. 52.)	98,786	47,358	92,190	238,334

* Only one class of ticket issued.

RAILWAYS

(SIGNAL ARRANGEMENTS AND SYSTEMS OF WORKING).

RETURN

(*In pursuance of "The Railway Regulation Act (Return of Signal Arrangement Working, &c.), 1873,"*)

BY

RAILWAY COMPANIES IN THE UNITED KINGDOM

RELATIVE TO

(1.) The Interlocking and Concentrating of Signal and Point Levers, &c.,

AND TO

(2.) The System or Systems upon which the Lines of Railway under their Control were Worked,

On 31st December 1893.

Presented to both Houses of Parliament by Command of Her Majesty.

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1894.

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TABLE OF CONTENTS.

	Page.
1. Return (No. 1) relative to the Interlocking and Concentrating of Signal and Point Levers—	
England and Wales	3
Scotland	7
Ireland	8
Summary of Return No. 1	9
2. Comparative Statement showing the Number, the Proportion per cent. of Interlocked Signal and Point Levers in 1892 and 1893, and the Increase in the percentage Interlocked in 1893	10
3. Return (No. 2) relative to the System or Systems upon which the Lines of Railway were worked on 31st December 1893—	
England and Wales	12
Scotland	70
Ireland	84
Summary of Return No. 2	92
4. Comparative Statement showing the Number of Miles of Double Line open for Passenger Traffic, and the Distance and Proportion per cent. thereof worked on the Absolute Block System in 1892 and 1893, and the Increase in the percentage so worked in 1893	95
5. Appendix showing the Progress made in Block Working and Signal Arrangements during the year 1893, and the Extent of such Work intended to be undertaken during 1894	99

Board of Trade,
August 1894

COURTENAY BOYLE.

RETURNS by RAILWAY COMPANIES in the UNITED KINGDOM with respect to CONNECTIONS on the LINES of RAILWAY under their Control, viz.—1. The Number of Cases in which any Passenger Line is connected with or crossed on the Level by—(*a.*) Any other Passenger Line; (*b.*) Any Goods Line; (*c.*) Any Siding; (*d.*) Any Cross-over Road:—2. The Number of Cases in which such Connections or Crossings have been perfected, so as to comply with the Requirements which the Board of Trade Inspecting Officers are now in the habit of making, in the case of New Lines, with respect to the following Matters:—(*a.*) Concentration of Signal and Point Levers; (*b.*) Interlocking of those Levers; (*c.*) The addition of Safety Points for Goods Lines and Sidings.

NAME OF RAILWAY.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
					Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Have.	Have not.	Have.	Have not.	Have.	Have not.
	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*
ENGLAND AND WALES.										
BARRY:										
Main Line	—	4	3	6	13	—	13	—	7	—
Branch	1	2	6	4	13	—	13	—	8	—
Total	1	6	9	10	26	—	26	—	15	—
BISHOP'S CASTLE	—	—	8	—	—	8	—	8	—	8
BRECON AND MERTHYR:										
Main Line	34	7	61	18	120	—	120	—	68	—
Branches	11	8	27	5	51	—	51	—	34	1
Total	45	15	88	23	171	—	171	—	102	1
CAMBRIAN:										
Main Line	104	4	199	33	309	31	309	31	174	29
Branches	1	—	25	2	19	9	19	9	18	7
Total	105	4	224	35	328	40	328	40	192	36
CHARNWOOD FOREST	2	1	7	—	10	—	10	—	8	—
CHESHIRE LINES	43	20	209	70	342	—	342	—	226	3*
CLEATOR AND WORKINGTON JUNCTION:										
Main Line	10	7	24	13	53	1	53	1	31	—
Branches	7	—	7	—	14	—	14	—	7	—
Total	17	7	31	13	67	1	67	1	38	—
COCKERMOUTH, KESWICK, AND PENRITH.	16	1	20	3	35	5	40	—	20	1†
COLNE VALLEY AND HALSTEAD	2	13	1	3	15	4	15	4	13	1
CORRIS	—	3	9	—	12	—	12	—	12	—
EAST AND WEST JUNCTION	31	—	22	2	55	—	55	—	22	—
FESTINIOG	—	1	27	3	27	4	27	4	9	19
FURNESS:										
Main Line	21	3	131	67	222	—	222	—	133	1
Branches	5	2	37	10	42	12	42	12	33	6
Total	26	5	168	77	264	12	264	12	166	7
GREAT EASTERN:										
Main Lines	187	25	531	231	955	19	955	19	538	18
Branches	352	41	940	268	1,589	12	1,589	12	966	15
Total	539	66	1,471	499	2,544	31	2,544	31	1,504	33
GREAT NORTHERN:										
Main Lines	171	144	423	267	1,005	—	1,005	—	567	—
Branches	111	33	401	188	711	22	711	22	434	—
Joint Lines	29	7	123	81	240	—	240	—	130	—
Total	311	184	947	536	1,956	22	1,956	22	1,131	—

* Passenger sidings, provided with interlocked scotches.
† Turntable siding protected by scotch block worked from cabin.

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Havenot.	Have.	Havenot.	Have.	Havenot.
ENGLAND AND WALES—*continued.*	*b*		*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*
GREAT NORTHERN AND GREAT EASTERN JOINT:	*a*									
Main Line	2	1	46	16	65	—	65	—	47	—
Branches	4	—	25	7	36	—	36	—	25	—
Total	6	1	71	23	101	—	101	—	72	—
GREAT NORTHERN AND LONDON AND NORTH-WESTERN: NOTTINGHAM JOINT LINES.										
Main Line	8	—	41	6	55	—	55	—	41	—
Branch (included in Great Northern Return).										
GREAT WESTERN:										
Main Line	361	106	1,757	650	2,801	73	2,832	42	1,816	47
Branches	421	96	1,344	229	1,978	112	2,001	89	1,356	84
Total	782	202	3,101	879	4,779	185	4,833	131	3,172	131
HAMMERSMITH AND CITY	3	1	4	7	15	—	15	—	5	—
HULL, BARNSLEY, AND WEST RIDING JUNCTION RAILWAY AND DOCK:										
Main Line	4	7	62	31	104	—	104	—	66	3
Branches	1	—	9	4	14	—	14	—	9	—
Total	5	7	71	35	118	—	118	—	75	3
ISLE OF WIGHT	—	—	22	5	20	7	22	5	22	—
ISLE OF WIGHT CENTRAL:										
Main Line	4	2	12	4	15	7*	15	7*	14	—
Branches	1	—	5	4	10	—	10	—	5	—
Total	5	2	17	8	25	7	25	7	19	—
LANCASHIRE AND YORKSHIRE	355	274	1,065	653	2,347	—	2,347	—	1,336	3†
LANCASHIRE AND YORKSHIRE AND LONDON AND NORTH-WESTERN JOINT LINES:										
Maudlands Junction to Fleetwoood	24	5	32	27	88	—	88	—	37	—
Kirkham to Lytham and Blackpool	13	7	19	10	49	—	49	—	26	—
Poulton to Blackpool	16	9	6	4	35	—	35	—	14	1‡
Cherry Tree to Chorley	—	—	16	7	23	—	23	—	16	—
Total	53	21	73	48	195	—	195	—	93	1
LISKEARD AND CARADON	—	1	1	—	1	1	1	1	1	1
LONDON AND NORTH-WESTERN:										
Main Lines	354	190	1,240	513	2,297	—	2,297	—	1,430	—
Branches	267	142	1,275	383	2,066	1	2,066	1	1,415	2
Joint Lines, &c.	20	12	90	36	158	—	158	—	102	—
Total	641	344	2,605	932	4,521	1	4,521	1	2,947	2
LONDON AND NORTH-WESTERN AND GREAT WESTERN JOINT:										
Main Lines	87	18	182	111	398	—	398	—	200	—
Branches	14	1	46	8	68	1	68	1	47	—
VALE OF TOWY	6	—	20	3	29	—	29	—	20	—
Total	107	19	248	122	495	1	495	1	267	—

* Fitted with Annett's patent lock and key, affixed to train staff.
† 2 of these are protected by scotch blocks.
‡ One siding governed by patent stop-block.

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Have not.	Have.	Have not.	Have.	Have not.
ENGLAND AND WALES—*continued.*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*	
	a									
LONDON AND SOUTH-WESTERN	265	22	914	522	1,723	—	1,723	—	933	3
LONDON, BRIGHTON, AND SOUTH COAST.	103	—	624	298	1,025	—	1,025	—	593	31
LONDON, CHATHAM, AND DOVER	53	2	245	179	478	1*	479	—	240	7†
LONDONDERRY	1	—	2	4	7	—	7	—	2	—
LONDON, TILBURY, & SOUTHEND:										
Main Line	20	—	66	49	133	2‡	135	—	62	4
Branches	11	—	11	4	25	1‡	26	—	11	—
Total	31	—	77	53	158	3	161	—	73	4
MACCLESFIELD COMMITTEE	2	—	10	10	22	—	22	—	10	—
MANCHESTER AND MILFORD	—	2	12	1	2	13	2	13	2	12
MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE:										
Main Line	48	47	368	209	672	—	672	—	415	—
Branches	22	17	209	119	367	—	367	—	226	—
Total	70	64	577	328	1,039	—	1,039	—	641	—
MANCHESTER, SOUTH JUNCTION, AND ALTRINCHAM.	13	4	23	18	58	—	58	—	27	—
MARYPORT AND CARLISLE:										
Main Line	3	6	45	21	75	—	75	—	51	—
Branches	7	2	24	—	33	—	33	—	26	—
Total	10	8	69	21	108	—	108	—	77	—
MERSEY:										
Main Line	2	—	6	10	18	—	18	—	6	—
Branches	2	—	3	2	7	—	7	—	3	—
Total	4	—	9	12	25	—	25	—	9	—
METROPOLITAN:										
Main Line	18	—	71	58	142	5	142	5	67	4
Branches	7	1	17	20	45	—	45	—	17	1
Total	25	1	88	78	187	5	187	5	84	5
METROPOLITAN DISTRICT	45	2	45	51	143	—	143	—	27	20
MIDLAND:										
Main Lines	186	214	982	250	1,632	—	1,632	—	1,196	—
Branch Lines	187	63	993	147	1,390	—	1,390	—	1,056	—
Lines worked	12	—	41	8	61	—	61	—	41	—
Joint Lines	50	4	140	24	218	—	218	—	144	—
Total	435	281	2,156	429	3,301	—	3,301	—	2,437	—
MIDLAND AND GREAT NORTHERN JOINT (EASTERN SECTION):										
Main Line	31	3	39	4	77	—	77	—	42	—
Branches	11	1	17	—	29	—	29	—	18	—
Total	42	4	56	4	106	—	106	—	60	—
MIDLAND AND SOUTH-WESTERN JUNCTION.	7	—	31	17	55	—	55	—	30	1
NEATH AND BRECON	14	7	41	3	41	24	43	22	41	7
NORTHAMPTON AND BANBURY	8§	—	13	—	20	1	20	1	12	1
NORTH AND SOUTH-WESTERN JUNCTION.	5	3	12	10	30	—	30	—	15	—
NORTH-EASTERN	403	277	1,947	857	3,484	—	3,484	—	2,224	—
NORTH LONDON	16	14	42	69	134	7¶	141	—	56	—

* The points of this cross-over road are fastened by padlocks, the keys of which are kept in the signal-box.
† Sidings where safety points cannot be fixed; each is provided with a scotch interlocked and worked from signal-box.
‡ Controlled by Annett's key from preceding station.
§ Two small stations are wire-locked only.
¶ In 4 of these cases fork-locks are provided, worked from the nearest signal station. In 2 cases the points are locked by Annett's key. In the other case the points are interlocked by ground frame, controlled from the nearest signal-box.

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Have not.	Have.	Have not.	Have.	Have not.
ENGLAND AND WALES—*continued.*										
	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*
NORTH STAFFORDSHIRE:										
Main Line	19	20	78	46	163	—	163	—	98	—
Branches	26	18	213	112	369	—	369	—	230	1
Total	45	38	291	158	532	—	532	—	328	1
NORTH WALES (NARROW GAUGE):										
Main Line	1	2	9	1	13	—	13	—	11	—
Branch	—	1	5	—	6	—	6	—	6	—
Total	1	3	14	1	19	—	19	—	17	—
OLDHAM, ASHTON, AND GUIDE BRIDGE JUNCTION.	3	1	19	15	38	—	38	—	20	—
PEMBROKE AND TENBY	11	1	20	—	25	7	25	7	16	5
PONTYPRIDD, CAERPHILLY, AND NEWPORT.	2	—	4	1	7	—	7	—	4	—
RAVENGLASS AND ESKDALE	—	—	8	—	—	8	—	8	—	8
RHONDDA AND SWANSEA BAY	16	7	27	5	55	—	55	—	34	—
RHYMNEY	21	12	96	58	186	1	186	1	107	1
SEVERN AND WYE AND SEVERN BRIDGE:										
Main Line	14	12	33	6	54	11	61	4	44	1
Branch	—	1	6	—	7	—	7	—	7	—
Total	14	13	39	6	61	11	68	4	51	1
SHEFFIELD AND MIDLAND	2	—	25	16	43	—	43	—	25	—
SOUTH-EASTERN:										
Main Line	33	1	129	145	303	5	304	4	89	41
Branches	35	2	415	229	632	49	632	49	352	65
Total	68	3	544	374	935	54	936	53	441	106
SOUTH-WESTERN AND MIDLAND RAILWAY COMPANIES (SOMERSET AND DORSET JOINT LINE).	65	2	65	32	164	—	164	—	67	—
SOUTHWOLD	—	—	9	—	—	9	9	—	9	—
SWANSEA AND MUMBLES	9	3	12	—	1	23	1	23	—	15
TAFF VALE:										
Main Line	10	19	34	44	107	—	107	—	53	—
Branch	19	16	155	90	280	—	280	—	171	—
Total	29	35	189	134	387	—	387	—	224	—
TALYLLYN	—	—	1	—	—	1	—	1	1	—
WEST LANCASHIRE	6	2	28	28	64	—	64	—	30	—
WEST LONDON EXTENSION	6	1	8	7	22	—	22	—	8	1
WEST SOMERSET MINERAL	—	—	6	—	—	6	—	6	—	6
WIRRAL	30	4	42	10	86	—	86	—	46	—
WREXHAM, MOLD, AND CONNAH'S QUAY:										
Main Line	3	2	29	18	52	—	52	—	31	—
Branch	9	3	12	—	24	—	24	—	15	—
Total	12	5	41	18	76	—	76	—	46	—

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Have not.	Have.	Have not.	Have.	Have not.
	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*
SCOTLAND.										
CALEDONIAN:										
Main Line	33	13	197	91	334	—	334	—	210	—
Branches	249	60	952	410	1,671	—	1,671	—	1,012	—
Total	282	73	1,149	501	2,005	—	2,005	—	1,222	—
CITY OF GLASGOW UNION	9	6	17	19	51	—	51	—	22	1
DUNDEE AND ARBROATH JOINT	3	3	37	24	67	—	67	—	40	—
GLASGOW AND KILMARNOCK JOINT:										
Main Line	5	2	31	25	63	—	63	—	33	—
Branch	1	—	4	3	8	—	8	—	4	—
Total	6	2	35	28	71	—	71	—	37	—
GLASGOW AND PAISLEY JOINT:										
Main Line	7	10	13	29	59	—	59	—	23	—
Branch	1	1	4	3	9	—	9	—	5	—
Total	8	11	17	32	68	—	68	—	28	—
GLASGOW AND SOUTH-WESTERN	140	30	406	187	763	—	763	—	434	2
GREAT NORTH OF SCOTLAND:										
Main Line	63	5	85	23	149	27	149	27	75	15
Branches	56	—	124	7	107	80	107	80	58	66
Total	119	5	209	30	256	107	256	107	133	81
HIGHLAND:										
Main Line	191	13	190	15	404	5	404	5	183	20
Branches	34	2	42	3	81	—	81	—	40	4
Total	225	15	232	18	485	5	485	5	223	24
NORTH BRITISH:										
Main Line	132	52	662	271	1,087	30	1,087	30	699	15
Branches	58	58	487	131	704	30	704	30	533	12
Total	190	110	1,149	402	1,791	60	1,791	60	1,232	27
PORTPATRICK AND WIGTOWNSHIRE:										
Main Line	28	—	24	3	55	—	55	—	24	—
Branches	6	—	22	—	24	4	24	4	14	8
Total	34	—	46	3	79	4	79	4	38	8

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Have not.	Have.	Have not.	Have.	Have not.
IRELAND.	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*
BALLYCASTLE	—	1	8	—	9	—	9	—	9	—
BELFAST AND COUNTY DOWN:										
Main Line	16	2	34	15	59	8	67	—	35	1
Branches	14	1	28	—	37	6	40	3	25	4
Total	30	3	62	15	96	14	107	3	60	5
BELFAST AND NORTHERN COUNTIES:										
Main Line	33	9	69	24	132	3	134	1	77	1
Branches	23	11	90	5	115	14	127	2	92	9
Total	56	20	159	29	247	17	261	3	169	10
CAVAN, LEITRIM AND ROSCOMMON LIGHT.	10	—	20	1	31	—	31	—	20	—
CLOGHER VALLEY	8	7	6	—	21	—	21	—	10	3*
CORK AND MACROOM DIRECT	—	—	1	—	1	—	1	—	1	—
CORK AND MUSKERRY	5	—	14	—	12	7	10	9	11	3
CORK, BANDON, AND SOUTH COAST:										
Main Line	20	1	26	1	37	11	37	11	18	9
Branches	16	—	16	—	29	3	29	3	7	9
Total	36	1	42	1	66	14	66	14	25	18
CORK, BLACKROCK, AND PASSAGE	5	—	—	—	5	—	5	—	—	—
DONEGAL	—	—	18	2	20	—	20	—	18	—
DUBLIN, WICKLOW, AND WEXFORD:										
Main Line	49	28	31	9						
Branches	5	14	4	4	144	—	144	—	76	1
Total	54	42	35	13						
GREAT NORTHERN (IRELAND):										
Main Line	83	4	186	46	319	—	319	—	190	—
Branches	26	1	90	9	108	18	108	18	78	13
Total	109	5	276	55	427	18	427	18	268	13
GREAT SOUTHERN AND WESTERN:										
Main Line	26	4	128	66	224	—	224	—	130	2
Branches	65	11	176	13	257	8	257	8	181	6
Total	91	15	304	79	481	8	481	8	311	8
LONDON AND NORTH-WESTERN:										
Dundalk, Newry, and Greenore	1	—	12	—	13	—	13	—	12	—
North Wall Extension	1	3	6	2	12	—	12	—	9	—
Total	2	3	18	2	25	—	25	—	21	—

* In these cases the arrangement of Annett's Lock opened by train staff without a safety siding was passed by the Board of Trade Inspector in 1887.

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Have not.	Have.	Have not.	Have.	Have not.
IRELAND—*continued.*	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*
LONDONDERRY AND LOUGH SWILLY:										
Main Line	—	—	6	—	6	—	6	—	6	—
Branch	—	—	6	—	3	3	3	3	3	3
Total	—	—	12	—	9	3	9	3	9	3
MIDLAND GREAT WESTERN:	74	1	256	59	370	20	385	5	252	5
SLIGO, LEITRIM, AND NORTHERN COUNTIES.	—	3	11	4	18	—	18	—	14	
WATERFORD AND CENTRAL IRELAND.	6	—	31	1	8	30	8	30	5	26
WATERFORD AND LIMERICK:										
Main Line	23	2	42	12	76	3	76	3	44	—
Branches	21	—	75	4	44	56	41	59	36	39
Total	44	2	117	16	120	59	117	62	80	39
WATERFORD AND TRAMORE	—	—	2	—	—	2	—	2	—	2
WATERFORD, DUNGARVAN, AND LISMORE.	13	—	26	1	37	3*	37	3*	26	—
WEST CLARE AND SOUTH CLARE	—	1	26	2	25	4	29	—	18	9

SUMMARY.

	Number of Cases in which any Passenger Line is connected with or crossed on the Level by				Number of Cases in which the usual Requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:—					
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.	
					Have.	Have not.	Have.	Have not.	Have.	Have not.
ENGLAND AND WALES	4,995	2,019	19,041	7,819	33,371	503	33,462	412	20,575	485
SCOTLAND	1,016	255	3,297	1,244	5,636	176	5,636	176	3,409	143
IRELAND	543	104	1,444	280	2,172	199	2,211	160	1,403	145
Total United Kingdom	6,554	2,378	23,782	9,343	41,179	878	41,309	748	25,387	773

* Points connected and locked by Annett's key on Electric Train Staff.

COMPARATIVE STATEMENT showing the Number of Cases upon the RAILWAYS in the UNITED KINGDOM in which the SIGNAL and POINT LEVERS had or had not been Interlocked, and the Proportion per Cent. Interlocked for the Years 1892 and 1893 respectively.

NAME OF COMPANY.	1892.		1893.		Per-centage Interlocked.		Per-centage Increase in 1893 over 1892.
	Interlocked.	Not Interlocked.	Interlocked.	Not Interlocked.	1892.	1893.	
ENGLAND AND WALES.					Per cent.	Per cent.	Per cent.
BARRY	27	—	26	—	100	100	—
BRECON AND MERTHYR TYDFIL JUNCTION	141	30	171	—	83	100	17
CAMBRIAN	294	65	328	40	82	89	17
CHARNWOOD FOREST	10	—	10	—	Cent.	Cent.	—
CHESHIRE LINES	338	—	342	—			
CLEATOR AND WORKINGTON	67	1	67	1	99	99	—
COCKERMOUTH, KESWICK, AND PENRITH	35	—	40	—	Cent.	Cent.	—
COLNE VALLEY AND HALSTEAD	15	4	15	4	79	79	—
CORRIS	11	—	12	—	Cent.	Cent.	—
EAST AND WEST JUNCTION	55	—	55	—			
FESTINIOG	27	4	27	4	87	87	—
FURNESS	260	16	264	12	94	92	2
GREAT EASTERN	2,501	43	2,544	31	98	99	1
*GREAT NORTHERN	1,919	27	1,956	22	99	99	—
GREAT NORTHERN AND GREAT EASTERN JOINT	101	—	101	—	100	100	—
GREAT NORTHERN AND LONDON AND NORTH-WESTERN JOINT LINES.	55	—	55	—	Cent.	Cent.	—
GREAT WESTERN	4,659	207	4,833	131	96	97	1
HAMMERSMITH AND CITY	16	—	15	—	100	100	—
HULL, BARNSLEY, AND WEST RIDING JUNCTION RAILWAY AND DOCK.	116	—	118	—	Cent.	Cent.	—
ISLE OF WIGHT	22	5	22	5	81·5	81·5	—
ISLE OF WIGHT CENTRAL	25	7	25	7	78	78	—
LANCASHIRE AND YORKSHIRE	2,330	—	2,347	—	Cent.	Cent.	—
†LANCASHIRE AND YORKSHIRE AND LONDON AND NORTH-WESTERN JOINT LINES.	178	—	195	—			
LONDON AND NORTH-WESTERN	4,512	5	4,521	1	Cent.	Cent.	—
LONDON AND NORTH-WESTERN AND GREAT WESTERN JOINT.	493	1	495	1	100	100	—
LONDON AND SOUTH-WESTERN	1,686	5	1,723	—	Cent.	Cent.	—
LONDON, BRIGHTON, AND SOUTH COAST	1,025	—	1,025	—	Cent.	Cent.	—
LONDON, CHATHAM, AND DOVER	480	—	479	—			
LONDONDERRY	7	—	7	—	Cent.	Cent.	—
LONDON, TILBURY, AND SOUTHEND	150	—	161	—	100	100	—
MACCLESFIELD COMMITTEE	20	—	22	—	Cent.	Cent.	—
MANCHESTER AND MILFORD	2	13	2	13	13	13	—
MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE	979	4	1,039	—	100	100	—
MANCHESTER, SOUTH JUNCTION, AND ALTRINCHAM.	58	—	58	—	Cent.	100	1
MARYPORT AND CARLISLE	108	—	108	—	100	100	—
MERSEY	25	—	25	—	Cent.	Cent.	—
‡METROPOLITAN	179	—	187	5			
METROPOLITAN DISTRICT	143	—	143	—			
MIDLAND	3,244	6	3,301	—	100	100	—
MIDLAND AND GREAT NORTHERN (EASTERN SECTION).	103	3	106	—	97	100	3
MIDLAND AND SOUTH-WESTERN JUNCTION	55	—	55	—	Cent.	Cent.	—
NEATH AND BRECON (NEATH BRANCH)	39	25	43	22	61	66	—
NORTHAMPTON AND BANBURY JUNCTION	20	2	20	1	91	95	4
NORTH AND SOUTH-WESTERN JUNCTION	29	—	30	—	100	100	—
NORTH-EASTERN	3,439	—	3,484	—	Cent.	Cent.	—
NORTH LONDON	137	—	141	—			
NORTH STAFFORDSHIRE	503	—	532	—	Cent.	Cent.	—
NORTH WALES NARROW GAUGE	19	—	19	—			
OLDHAM, ASHTON-UNDER-LYNE, AND GUIDE BRIDGE JUNCTION.	38	—	38	—			
PEMBROKE AND TENBY	—	43	25	7	Nil.	78	78
PONTYPRIDD, CAERPHILLY, AND NEWPORT	7	—	7	—	100	100	—
RAVENGLASS AND ESKDALE	—	8	—	8	Nil.	Nil.	—
RHONDDA AND SWANSEA BAY	50	—	55	—	Cent.	Cent.	—

* Including the Methley and the West Riding and Grimsby Joint Railways.

† Including the North Union, Preston and Wyre, Preston and Longridge, and the Lancashire, and Yorkshire and Lancashire Union Joint Lines.

‡ Including the Metropolitan and Metropolitan District Joint Line.

Comparative Statement—*continued.*

Name of Company.	1892.		1893.		Per-centage Interlocked.		Per-centage Increase in 1893 over 1892.
	Interlocked.	Not Interlocked.	Interlocked.	Not Interlocked.	1892.	1893.	
ENGLAND AND WALES—*continued.*							
					Per cent.	Per cent.	Per cent.
Rhymney	184	2	186	1	99	99	—
Severn and Wye and Severn Bridge	68	4	68	4	94·5	95	—
Sheffield and Midland	43	—	43	—	Cent.	Cent.	—
South-Eastern	780	174	936	53	82	94·5	12·5
South-Western and Midland	168	—	164	—			
Southwold	9	—	9	—	Cent.	Cent.	—
Swansea and Mumbles	—	—	1	23	—	4	—
Taff Vale	381	1	387	—			
West Lancashire	64	—	64	—	Cent.	Cent.	—
West London Extension	22	—	22	—			
West Somerset Mineral	—	6	—	6	Nil.	Nil.	—
Wirral	86	—	86	—	Cent.	Cent.	—
Wrexham, Mold, and Connah's Quay	76	—	76	—	Cent.	Cent.	—
Total, England and Wales	32,630	706	33,462	412	98	99	1
SCOTLAND.							
Caledonian	1,941	11	2,005	—	99	100	1
City of Glasgow Union	49	—	51	—	100	100	—
Dundee and Arbroath Joint	64	4	67	—	94	100	6
Glasgow and Kilmarnock Joint Line	70	—	71	—			
Glasgow and Paisley Joint Line	68	—	68	—	Cent.	Cent.	—
Glasgow and South-Western	743	10	763	—	99	100	1
Great North of Scotland	240	112	256	107	68	70·5	2·5
Highland	422	53	485	5	89	99	10
North British	1,720	237	1,791	60	88	96·5	8·5
Portpatrick and Wigtownshire	79	4	79	4	95	95	—
Total, Scotland	5,412	434	5,636	176	93	97	4
IRELAND.							
Ballycastle	9	—	9	—	Cent.	Cent.	—
Belfast and County Down	105	6	107	3	95	97	2
Belfast and Northern Counties	239	9	261	3	—	99	3
Cavan Leitrim and Roscommon Light	31	—	31	—			
Clogher Valley	21	—	21	—	Cent.	Cent.	—
Cork and Macroom Direct	1	—	1	—			
Cork and Muskerry	10	7	10	9	59	53	—
Cork, Bandon, and South Coast	50	30	66	14	62·5	82	20·5
Cork, Blackrock, and Passage	4	6	5	—	40	100	60
Dublin, Wicklow, and Wexford	132	12	144	—	92	100	8
Great Northern (Ireland)	427	18	427	18	96	96	—
Great Southern and Western	336	13	481	8	96	98	2
London and North-Western	25	—	25	—	Cent.	Cent.	—
Londonderry and Lough Swilly	9	3	9	3	75	75	—
Midland Great Western	372	11	385	5	97	98·5	1·5
Sligo, Leitrim, and Northern Counties	18	—	18	—	Cent.	Cent.	—
Waterford and Central Ireland	8	30	8	30	21	21	—
Waterford and Limerick	117	62	117	62	65	65	—
Waterford and Tramore	—	2	—	2	Nil.	Nil.	—
Waterford, Dungarvan, and Lismore	27	1	37	3	96	92·5	—
West Clare and South Clare	8	6	29	—	57	100	43
Total, Ireland	1,958	216	2,211	160	90	93	3
Total, United Kingdom	40,000	1,356	41,309	748	97	98	1

RETURN, in compliance with the RAILWAY REGULATION ACT, 1873, showing the Systems were Worked on the

RAILWAY COMPANY.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OF (Where the System is not continuous, enter separately one under the other, unde									
			WORKED BY TELEGRAPH - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES.												
BARRY - - -	m. ch. 5 72	m. ch. —	Cogan - -	Barry Dock -	m. ch. 5 72	m. ch. —	m. ch. —	m. ch. —	- - -	- - -	m. ch. —
					5 72	—					
BISHOP'S CASTLE -	—	9 54	- -	- - -	—	—	—	—	- - -	- - -	—
BRECON AND MERTHYR.	12 74	45 77	Brecon - - - (Including Caerphilly Branch.)	Bassaleg Junction	12 74	—	—	—	- - -	- - -	—
			Brecon - - (Including Dowlais, Rhymney, and Merthyr Branches.)	Machen - -	—	—	—	45 77			
	12 74	45 77			12 74	—	—	45 77			
CAMBRIAN - - -	8 56	216 72	Whitchurch Junction.	Oswestry - -	—	—	—	18 12	- - -	- - -	—
			Oswestry - -	Llanymynech -	5 76						
			Llanymynech -	Llanfyllin -	—	9 13					
			Llanymynech -	Buttington Junction.	—	—	—	7 2			
			Buttington Junction.	Welshpool - -	2 60						
			Welshpool - -	Moat Lane Junction.	—	—	—	18 19			
			Moat Lane Junction.	Talyllyn Junction	—	—	—	55 76			
			Moat Lane Junction.	Aberystwith -	—	—	—	43 36			
			Glandovey Junction.	Barmouth Junction.	—	—	—	20 1			
			Barmouth Junction.	Barmouth - -	—	1 45					
			Barmouth - -	Pwllheli - -	—	—	—	31 62			
			Barmouth Junction.	Dolgelly - -	—	7 36					
					8 56	18 14	—	194 48			
CHARNWOOD FOREST.	—	10 0	Charnwood Forest Junction.	Loughboro' - -	—	10 0	—	—	- - -	- - -	—

under which the various Portions of the Line under the Control of the several Companies 31st December 1893.

OF OTHER RAILWAYS WORKED BY THEM. the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)												Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	REMARKS.
WORKED BY TELEGRAPH. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.								
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.			
							m. ch.	m. ch.	m. ch.	m. ch.	m. ch.		
- -	- -	—	—	—	- - -	- - -	—	—	—	—	21 34		
- -	- -	—	—	—	Bishop's Castle -	Stretford Bridge Junction.	9 54	—	—	—	—		Goods lines at Brecon, Merthyr, &c.
- -	- -	—	—	—	- - -	- - -	—	—	—	—	2 51		
									—	—	2 51		
- -	- -	—	—	—	Llynclys - -	Porthywaen -	—	—	—	—	*1 65		* Worked under system No. 1.
					Llanymynech -	Nantmawr - -	—	—	—	—	*3 75		
					Abermule - -	Kerry - - -	3 55						
					Junction line to join Great Western Railway at Oswestry.		—	0 14					
					Loop line at Barmouth - - -		—	0 21					
					Aberdovey Junction.	Aberdovey Harbour.	—	—	—	—	0 38†		† Worked under system No. 2.
							3 55	0 35	—	—	6 18		
- -	- -	—	—	—	- - -	- - -	—	—	—	—	—		

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic* and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under)									
			Worked by Telegraph									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.	
ENGLAND AND WALES—*continued.*												
CHESHIRE LINES	m. ch. 118 16	m. ch. 10 1	Liverpool Central Station.	Manchester Central Station.	m. ch. 34 5	m. ch. —	m. ch. —	m. ch. —			m. ch. —	
			Warrington Straight Line		2 17							
			Chorlton-cum-Hardy Junction.	Throstle West Junction.	2 2							
			Glazebrook East Junction.	Woodley Junction	15 74							
			Apethorne Junction.	Godley Junction	2 16							
			Skelton Junction	Broadheath Junction.	0 39							
			Skelton Junction	Deansgate Junction.	0 32							
			Bowdon Junction	Chester	30 72							
			Halewood East Junction and Hunts Cross West Junction.	Huskisson and Aintree, Liverpool.	15 49							
			Southport Junction, Aintree.	Southport	14 3							
			Cornbrook Loops		0 27							
			Mouldsworth	Helsby	—	3 70						
			Winsford Branch		—	6 11						
					118 16	10 1	—	—				
CLEATOR AND WORKINGTON JUNCTION.	11 15	6 30	Cleator Moor Junction.	Siddick Junction	11 15	—	—	—			—	
			Calva Junction	Linefoot Junction	—	—	—	6 30				
					11 15	—	—	6 30				
COCKERMOUTH, KESWICK, AND PENRITH.	—	31 14	Cockermouth Junction.	Penrith	—	14 54	—	16 40			—	
COLNE VALLEY AND HALSTEAD.	—	19 0			—	—	—	—			—	
CORRIS	—	6 40			—	—	—	—			—	
DOVER AND DEAL	8 28	—	Buckland Junction	Deal Junction	8 28	—	—	—			—	
EAST AND WEST JUNCTION.	—	51 0	Ravenstone Junction.	Broom Junction	—	51 0						
FESTINIOG	—	13 20	Portmadoc	Duffws	—	13 20	—	—			—	
FURNESS	73 45	34 78	Carnforth	Sellafield	63 51	—	—	—			—	
			Leven Junction	Greenodd Junction	0 29							
			Plumpton	Priory Station	1 72							
			Millwood Loop		0 41							
			Millwood Junction	Thwaite Flat	1 2							
			Salthouse Junction	Buccleuch Junction.	0 37							
			St. Luke's Junction.	Ramsden Dock	1 48							
		—	Sellafield	Corkickle No. 2 Cabin.	—	—	—	9 54				
			Corkickle No. 1 Cabin.	Bransty	—	—	—	1 1				

OF OTHER RAILWAYS WORKED BY THEM.

th Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
							m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- -	- -	—	—	—	Allerton Branch - - -		—	—	—	—	§0 47	* Worked under system No. 1.
					Cressington Junction.	Garston Old Station.	—	—	—	—	§0 29	† Double line worked on the permissive block system.
					Halewood West Junction.	Hunt's Cross East Junction.	—	—	—	—	†0 62	
					Falks Branch, Winsford - -		—	—	—	—	‡0 28	‡ Worked under system No. 3.
					George's Road Junction, Stockport.	Heaton Mersey West Junction.	—	—	—	—	†1 3	§ Double line worked on absolute block system.
					Northwich Salt Branches - -		—	—	—	—	*3 66	
					Winnington Branch - - -		—	—	—	—	*1 63	
											8 58	
- -	- -	—	—	—	Distington Junction.	Rowrat Junction	—	—	—	—	6 43	* Double line worked by electric bell signal.
					Cloffock's Junction	Workington Bridge Junction.	—	—	—	—	*0 30	
					Harrington Junction.	Harrington Ironworks.	—	—	—	—	§1 35	‡ Worked under system No. 3.
					Harrington Junction.	Cammell's Ironworks.	—	—	—	—	‡1 19	§ Worked under system No. 1.
					Harrington Junction.	Moss Bay Ironworks.	—	—	—	—	§1 13	
					Dock Junction -	Lonsdale Dock -	—	—	—	—	‡1 11	
											11 62	
- - - -		—	—	—	- - -	- - -	—	—	—	—	—	
- -	- -	—	—	—	Chappel - -	Haverhill -	—	—	19 0	—	—	
- -	- -	—	—	—	Machynlleth -	Aberllefenny -	6 40†	—	-	—	4 40	† Corris to Aberllefenny 1 m. 40 ch., worked also under train staff system without tickets.
- -	- -	—	—	—	- - -	- - -	—	—	—	—	—	
- -	- -	—	—	—	- - -	- - -	—	—	—	—	0 14	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	7 64	Branches to Mines and Works.
Carnforth Station, Junc. cabin	Carnforth No. 2 cabin	0 13*										* Worked by electric bells and gongs.
Corkickle No. 1 Cabin.	Corkickle No. 2 Cabin.	—	—	0 23*								

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under WORKED BY TELEGRAPH - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
FURNESS—*cont.* -	—		Foxfield - -	Coniston - -	—	10 7					
			Plumpton - -	Greenodd - -	2 40						
			Greenodd - -	Lakeside - -	—	—	—	5 60			
			Arnside - -	Hincaster	—	5 23					
			Salthouse - -	Piel - -	—	2 70					
			Goldmire Curve - - - -		0 32						
					72 32	18 20	—	16 35			
GARSTANG AND KNOT END.	—	7 0	- - -	- - -	—	—	—	—	- - -	- - -	—
GOLDEN VALLEY -	—	19 0	- - -	- - -	—	—	—	—	- - -	- - -	—
GREAT EASTERN -	537 39	496 13	Liverpool Street -	Enfield - -	10 61	—	—	—	- - -	- - -	—
			Hackney Downs Junction.	Copper Mills Junction, near Tottenham.	1 68						
			Clapton Junction	Chingford - -	5 78						
			Hall Farm Junction.	Copper Mills Junction.	0 24						
			Edmonton Bury St. Junction.	Cheshunt - -	5 2						
			Seven Sisters Junction.	Palace Gates -	2 49						
			Seven Sisters Curve.	South Tottenham	0 13						
			Bethnal Green Junction.	Norwich, Victoria	113 0						
			Shenfield - -	Wickford - -	8 67						
			Wickford Junction.	Prittlewell - -	—	—	—	11 64			
			Prittlewell - -	Southend - -	0 49						
			Wickford - -	Southminster -	—	16 36					
			Belchamp Junction.	Fanton Junction -	—	0 76					
			Woodham Ferris Junction.	Maldon West Station.	—	7 16					
			Maldon West Station.	Maldon East Junction.	1 13						
			Witham West Curve - -		0 15						
			Witham East Curve - -		0 17						
			Witham South Junction.	Langford Junction	—	4 75					
			Langford Junction	Maldon East Station.	0 54						
			Langford Junction.	Maldon West Junction.	0 16						
			Witham - -	Braintree Goods Junction.	—	5 70					
			Marks Tey -	Bury - -	—	31 1					
			Colchester - -	Wyvenhoe - -	4 21						
			Wyvenhoe - -	Great Bentley -	—	—	—	4 59			
			Great Bentley -	Thorpe - -	4 25						
			Thorpe (T.H.) Junction.	Walton-on-Naze	—	5 13					
			Loop, Eastgate, and Hythe Junctions.	St. Botolph's -	1 4						
			Thorpe (T.H.) Junction.	Clacton on-Sea -	—	—	—	4 56			
			Manningtree Junction.	Harwich - -	11 24						
			Manningtree North Curve - -		0 23						
			East Suffolk Junction.	Yarmouth South Town.	52 19						
			Westerfield -	Felixstowe Station	—	—	—	12 54			
			Beccles - -	Coke Ovens Junction.	—	7 52					
			Coke Ovens Junction.	Lowestoft - -	0 41						
			Saxmundham Junction.	Aldeburgh - -	—	7 74					
			Tivetshall - -	Beccles - -	—	19 41					
			Wymondham -	Forncett -	6 16						
			Stratford (Central Junction).	Norwich, Thorpe Junction.	122 10						
			Wensum Curve, between Trowse Swing Bridge and Whitlingham Junction.		0 25						
			Stratford (Western Junction).	Woolwich - -	5 7						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- WORKED BY TELEGRAPH.

Not on either of the foregoing Systems.

From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.
		m. ch.	m. ch.	m. ch.
		0 13	—	0 23
- - - - - -		—	—	—
- - - - - -		—	—	—
- - - - - -		—	—	—

Single Lines of Railway (not included in the foregoing Columns),
(1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or
(2.) Worked under the Train Porter System; or
(3.) Worked under the Train Staff System.

From	To	Distance of: System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.
		m. ch.	m. ch.	m. ch.	m. ch.
Garstang and Catterall Station.	Pilling Station	7 0	—	—	—
Pontrilas - -	Hay - -	—	—	—	19 0
Braintree Goods Junction.	Braintree Station	—	0 30*	—	—
Wyvenhoe -	Brightlingsea -	5 0	—	—	
Bentley Junction	Hadleigh - -	7 8	—	—	
Mellis - -	Eye - -	2 71	—	—	
Wickham Market	Framlingham -	5 52	—	—	
Felixstowe Station	Felixstowe Pier -	0 69	—	—	
Millwall Boundary Junction.	North Greenwich	—	—	0 34	

Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and General Traffic only.*

m. ch.	
7 64	
—	
—	
—	*Double Lines.*
0 1	Poplar Junction to Midland Sidings.
0 32	Norwich Goods.
0 53	Bishopsgate Goods Branch.
0 21	Loughton Goods Branch.
0 26	Wisbech Goods Branch.
0 26	Lynn Goods Branch.
0 15	Chingford Goods Branch.
0 14	Hertford Goods Branch
2 28	Total double lines.
	Single Lines.
0 39	Pepper Warehouse Branch, Blackwall.
0 41	Spitalfields Coal Line.
0 22	Braintree Goods Branch.
1 16	Ipswich Goods Branch.
0 29	Yarmouth, South Town Branch.
0 11	Cambridge Goods Line.
0 10	Cambridge Curve, Hills Road to Great Northern Railway.
0 7	Cambridge Curve, Mill Road to Midland Railway.
1 22	Lynn Harbour Branch.
1 5	Lynn Dock Branch.
0 18	Sudbury Goods Branch.
0 25	Hythe Goods Branch.
1 32	Snape Goods Branch.
0 31	Harwich Goods Branch.
0 17	Sutton Goods Line.
0 2	West India Docks to Midland Sidings.
8 7	Total single lines.

REMARKS.

* Worked on the train Pilot System.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Lite.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
GREAT EASTERN—*continued.*	m. ch. —	m. ch. —	Custom House -	Albert Dock Junction.	m. ch. 0 18	m. ch.	m. ch.	m. ch.			m. ch.	
			Becton connecting line.	Royal Albert Docks.	0 6							
			Albert Dock Junction.	Beckton - -	—	1 65						
			Stratford, Southern Junction.	Victoria Park -	1 31							
			Stratford, Central Junction.	Channelsea Junction.	0 29							
			Lea Curve, Lea Junction.	High Meads - -	0 22							
			Carpenter Road Curve, Lea Junction.	Western Junction	0 25							
			Stratford, Chobham Farm Junc.	Fork Junction -	0 35							
			Stratford, Southern Junction.	Stratford, Eastern Junction.	0 13							
			Channelsea Junction.	Loughton Branch Junction.	0 62							
			Stratford (Loughton Branch Junc.).	Epping - -	11 68							
			Epping - -	Ongar - -	—	6 8						
			Lea Bridge - -	Hall Farm Junction.	0 52							
			Tottenham West Junction.	Tottenham South Junction.	0 12							
			Angel Road -	Edmonton -	—	1 25						
			Broxbourne -	Hertford - -	5 63							
			St. Margarets -	Buntingford -	—	13 49						
			Fenchurch Street	Blackwall -	3 43							
			Stepney - -	Bow Junction -	1 54							
			Salmon's Lane Junction.	Limehouse - -	0 25							
			Bishop Stortford -	Braintree - -	—	17 70						
			Audley End -	Bartlow - -	—	7 43						
			Shelford - -	Melford - -	—	28 25						
			Haverhill Loop from G.E. to C.V. Lines		—	0 74						
			Shelford, Shepreth Branch Junction.	Shepreth - -	5 28							
			Ely, Peterboro' Branch Junction.	Peterboro' Fletton Junction.	28 30							
			Peterboro, Fletton Junction.	Junc. with Midland and London and North-Western.	0 19							
			March, North Junction.	Wisbech - -	7 49							
			March - -	Peterboro' Curve -	0 14							
			Ely South Curve - - -		1 0							
			Ely, Lynn Branch Junction.	Lynn - -	25 1							
			North Wootton -	Hunstanton - -	—	—	—	12 0				
			Lynn Junction -	North Wootton -	—	2 76						
			Lynn - - -	Dereham - -	—	26 11						
			Heacham - -	Wells - - -	—	18 5						
			Dereham South Curve -		0 14							
			Wisbech - -	Magdalen Road -	—	9 42						
			Denver Junction -	Stoke Ferry - -	—	7 11						
			Barnwell Junction	Fordham Junction.	—	11 71						
			Fordham Junction.	Mildenhall -	—	7 20						
			Cambridge -	Newmarket -	13 70							
			Newmarket -	Warren Hill Junction.	0 30	—	—	0 62				
			Warren Hill Junction.	Haughley - -	25 25							
			Chesterton Junction.	St. Ives Junction	12 50							
			St. Ives Junction	Needingworth Junction.	1 74							
			Somersham Junction.	Ramsey - -	—	6 63						
			Ely, Sutton Branch Junction.	Needingworth Junction.	—	14 76						
			Ely Dock Junction.	Snailwell Junction.	—	10 58						
			Snailwell Junction.	Warren Hill Junction.	0 62							
			Snailwell Junction.	Chippenham Junction.	0 61							
			Brundall Junction	Breydon Junction	—	11 21						
			Reedham - -	Breydon Junction	—	7 14						
			Breydon Junction	Yarmouth - -	1 13							
			Roudham Junction.	Swaffham - -	—	18 23						

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line.		From	To	Distance of					
			Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.			System as above. (1.)	Train Porter System. (2.)	Train Staff System. 3.)			
									With Tickets.	Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m ch.	m. ch.	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic* and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under Worked by Telegraph									
			On the Absolute Block System.							On the Permissive Block System.		
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
GREAT EASTERN—*continued.*	m. ch.	m. ch.	Thetford Bridge -	Bury Junction -	m. ch. —	m. ch. 11 50	m. ch.	m. ch.			m. ch.
			Thetford West Junction.	Thetford Bridge -	0 69						
			Norwich, Thorpe -	Reedham - -	12 18						
			Whitlingham Junction.	Cromer - -	—	—	—	21 77			
			Wroxham - -	County School -	—	23 48					
			Wymondham -	Dereham - -	11 31						
			Dereham -	Wells - -	—	21 50					
			Trowse Upper Junction.	Trowse Lower Junction.	1 2						
			Reedham - -	Coke Ovens Junction.	—	10 61					
			Marsh Junction -	Swing Bridge Junction.	—	0 35					
			Fleet Junction -	Haddiscoe - -	—	0 69					
					537 39	405 17	—	68 52			
GREAT NORTHERN -	600 60	174 1	London - -	Askern - -	160 14	—	—	—			—
			Finsbury Park -	Canonbury - -	1 31						
			Finsbury Park -	Finchley - -	4 70						
			Fletton Junction	Longville Junction	1 50						
			Finchley - -	High Barnet -	3 63						
			Highgate - -	Muswell Hill -	1 11						
			Wood Green -	Enfield - -	4 15						
			Welwyn Junction	Hertford - -	0 16	7 20					
			Welwyn Junction	Dunstable - -	0 63	16 63					
			Hitchin - -	Shepreth - -	17 62						
			Essendine - -	Ryhall - -	—	1 50					
			Wansford Road -	Wansford Junction.	0 6	1 13					
			Sedgebrook -	Barkstone East Junction.	4 3						
			Werrington Junction.	Pyewipe Junction	60 26						
			Louth - -	Bardney - -	0 32	20 47					
			St. Albans, G.N. to L. & N.W. Lines -		—	0 52					
			Barkstone Junction.	Boston - -	27 32						
			Kirkstead - -	Horncastle -	0 15	7 10					
			Lincoln - -	Honington - -	17 79						
			Washingboro' -	Greetwell Junction, Lincoln.	1 0						
			Essendine - -	Bourn - -	0 14	6 32					
			Newark - -	Bottesford -	9 26						
			Scalford - -	Waltham - -	0 10	3 43					
			Tilton - -	Leicester - -	11 29						
			Colwick East Junction.	Pinxton - -	18 22						
			Colwick West Junction.	Colwick North Junction.	0 58						
			Awsworth Junction.	Egginton Junction.	18 60						
			Egginton Junction.	Dove Junction -	1 21						
			Leen Valley Junction, Daybrook.	Annesley - -	7 55						
			Bromshall Junction.	Stafford - -	2 19	10 39					
			Holbeck - -	Bowling Junction	8 65						
			Beeston - -	Batley - -	4 65						
			Ardsley - -	Laister Dyke -	10 27						
			Bramley West -	Broad Lane Junction.	3 36						
			Laister Dyke -	Bradford Goods -	1 9						
			Tyersall Junction	Cutlers Junction	0 29						
			St. Dunstan's East.	Lancashire and Yorkshire Junction, Bradford.	0 58						
			Dudley Hill -	Lowmoor - -	1 77						
			Queensbury South	Queensbury North	0 15						
			St. Dunstan's East	St. Dunstan's West	0 12						

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

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Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
							21 40	0 30	0 34	—	10 35	
Finchley -	Edgware -	—	3 73	—	Stamford	Wansford -	—	—	7 8	—	—	
Hatfield -	St. Alban's	—	5 24									
Holme -	Ramsey -	—	5 65									
Ryhall -	Stamford	—	2 7									
Firsby -	Spilsby -	—	4 14									
Marlpool -	Heanor -	0 6	1 31									

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph									
			On the Absolute Block System.							On the Permissive Block System.		
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
GREAT NORTHERN—*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Laister Dyke East	Shipley - -	6 11						
			Quarry Gap -	Cutlers Junction -	0 27						
			Branch to Midland	Railway at Shipley	0 8						
			St. Dunstan's North.	Keighley - -	13 1						
			Branch to Midland	Railway, Keighley	0 16						
			Queensbury East	Holmfield - -	2 25						
			Wortley East -	Wakefield (Ings Junction).	9 55						
			Wortley South -	Wortley West -	0 23						
			Wrenthorpe South	Runtlings Lane Junction.	3 68						
			Runtlings Lane Junction.	Batley - - -	—	2 70					
			Batley - -	Adwalton Junction.	3 12						
			Wrenthorpe North	Wrenthorpe West	0 29						
			Runtlings Lane Junction.	Dewsbury and Batley.	3 75						
			Boston - -	Grimsby - -	47 28						
			Grantham - -	Nottingham -	22 35						
			Stanton Junction	Marlpool - -	0 60	1 48					
			Firsby - -	Skegness -	1 64	7 37					
			Louth - -	Mablethorpe -	0 22	11 42					
			Willoughby -	Sutton-on-Sea -	0 20	6 65					
			Sutton - -	Mablethorpe -	0 4	2 44					
			Bourn - -	Sleaford - -	0 21	17 8					
			Bourn - - -	Spalding - -	5 12	4 22					
			Bourn - -	Bytham - -	4 72	0 2					
			Spalding - -	Sutton Bridge -	1 9	14 32					
			Spalding Junction	Lines - -	1 24						
			Saxondale Junction.	Stathern Junction	7 20						
			Bottesford North	Melton Mowbray Station.	14 74						
			Trent Lane Jn., Nottingham.	Daybrook Junction	3 69						
			Doncaster - -	Wakefield - -	19 10						
			Sandal Junction -	Walton Junction, Midland Railway.	0 56						
			Adwick Junction	Haggswood Junction.	6 65						
			Hare Park - -	Crofton Junction	1 29						
			Lofthouse North -	Methley - -	5 2						
			Lofthouse South -	Lofthouse East -	0 25						
			Holmfield - -	Halifax (St. Pauls)	3 8						
	600 60	174 1			600 54	144 19					
GREAT NORTHERN AND GREAT EASTERN JOINT.	58 19	—	Sleaford South Junction.	Junction with Sleaford Branch at Sleaford.	0 39						
			Sleaford West Junction.	Sleaford North Junction.	8						
			Sleaford South Junction.	Junction with Honington Line, Lincoln.	20 4						
			Greetwell Junction	Pyewipe Junction, Lincoln.	3 10						
			Boultham Junction.	Holmes West Junction.	0 27						
			Pyewipe Junction	East Trent Junction, Gainsboro'.	14 45						
			West Trent Junction, Gainsboro'.	Black Carr Junction, Doncaster.	17 46						
	53 57	4 55	Huntingdon Junction with Great Northern.	Godmanchester -	0 67	—	—	—	- - -	- - -	—
			Needingworth Junction.	March Loop Junction.	16 23						
			Whitemoor Junction.	Spalding South Junction.	19 7						
			Spalding North Junction.	Sleaford South Junction.	17 40						
			Godmanchester -	St. Ives - -	—	4 55					
	111 76	4 55			111 76	4 55					

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

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Not on either of the foregoing Systems.													
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.			
		m. ch.	m. ch.	m. ch.	*Colliery and Goods Branches.*		m. ch.	m. ch.	m. ch.	m. ch.	Double. m. ch.	Single. m. ch.	
					Horton Junction	City Road Goods	—	—	—	—	1 26		
					Branch to Lancashire and Yorkshire Railway, Dewsbury.		—	—	—	—	0 48		
					Pye Hill - -	Midland Railway	—	—	—	—	0 25		
					Branch to Burton from North Staffordshire Railway.		—	—	—	—	0 40		
					Palmerston Branch - - -		—	—	—	—	0 25	0 11	
					Cinder Hill „ - - -		—	—	—	—	0 31		
					Watnall „ - - -		—	—	—	—	—	1 5	
					Codnor Park „ - - -		—	—	—	—	—	0 29	
					West Hallam „ - - -		—	—	—	—	—	0 17	
					Woolsthorpe Branch - - -		—	—	—	—	—	5 40	
					Bestwood Colliery Branch (Leen Valley Railway).		—	—	—	—	—	0 37	
					Stanton Branch - - -		—	—	—	—	0 9	3 13	
					Eaton Branch - - -		—	—	—	—	—	3 19	
					Eastwell Branch - - -		—	—	—	—	—	1 13	
					Branch to Lancashire and Yorkshire Railway at Methley.		—	—	—	—	0 28		
					Branch to Gas Works, Stafford -		—	—	—	—	—	0 26	
		0 6	22 54	—			—	—	7 8	—	3 72	15 50	
- - - - - -		—	—	—	- - -	- - -	—	—	—	—	0 11		Chatteris Dock branch single line.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked By Telegraph - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
					Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff Service in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
GREAT NORTHERN AND LONDON AND NORTH-WESTERN JOINT COMMITTEE.	22 75*	—	Welham Junction	Melton Mowbray	13 54	—	—	—	- - -	- - -	—
			Melton Mowbray	Saxondale Junction.	—*						
			Hallaton Junction	Drayton Junction	3 30						
			Stathern Junction	Bottesford North	5 71						
					22 75						
GREAT WESTERN -	1,104 32	1,141 33	Section 1.—Paddington to Penzance.								
			Paddington - -	Penzance† - -	262 25	—	—	63 31	- - -	- - -	—
			Truro - -	Falmouth - -	—	—	—	11 68			
			Bristol Loop	- - -	0 26						
			West London Junction.	North Pole Junction.	0 34						
			Southall - -	Brentford -	3 47						
			West Drayton -	Uxbridge - -	2 39						
			West Drayton Junction.	Staines - - -	—	6 0					
			Slough - - -	Windsor§ - -	2 55						
			Slough West Fork	- - -	0 19						
			Maidenhead -	Kennington Junction.	—	—	—	36 57			
			Princes Risboro'	Aylesbury§ -	—	7 27					
			Twyford - -	Henley - -	—	4 47					
			Didcot - -	Winchester - -	—	43 27					
			Reading West Fork	- - -	0 46						
			Southcote Junction.	Basingstoke -	15 35						
			Southcote Junction.	Newbury - -	15 27						
			Newbury - -	Holt Junction -	8 34	—	—	32 35			
			Savernake - -	Marlborough -	—	—	—	5 47			
			Bristol (South Wales Junction).	Severn Tunnel Junction West.	16 65						
			Narroways Hill Junction.	Ashley Hill Junction.	0 30						
			Bristol (North Somerset Junction.	Frome - -	3 51	19 55					
			East Depôt Junction, Bristol.	Pylle Hill Junction.	1 6						
			Bathampton -	Bradford Junction	9 10						
			Westbury Junction.	Salisbury‖ - -	4 64	—	—	19 51			
			Thingley Junction	Weymouth‖ -	72 53						
			Dorchester Junction.	Dorchester, London and South-Western Railway.	0 28						
			Witham - -	Wells Junction -	—	14 2					
			Wells - -	Yatton - - -	—	17 43					
			Yatton - -	Clevedon - -	—	3 45					
			Portishead Junction.	Portishead -	1 41	8 7					
			Worle, Weston loop	Uphill Junction -	3 74						
			Durston - -	Yeovil (Pen Mill)	0 10	—	—	19 76			
			Creech Junction -	Chard - - -	—	12 75					
			Norton Fitzwarren Junction.	Minehead - -	—	22 60					
			Norton Fitzwarren Junction.	Barnstaple - -	—	—	—	43 77			
			Tiverton Junction	Tiverton - -	0 13	4 47					
			Tiverton - -	Stoke Canon -	—	10 53					
			Morebath Junction.	Tiverton - -	—	8 41					
			Tiverton Junction	Hemyock - -	—	7 29					
			Newton Junction	Kingswear‡ - -	5 68	—	—	8 63			
			Newton Junction	Moretonhampstead	—	12 5					
			Totnes - - -	Ashburton - -	—	9 16					
			Tavistock Junction.	Marsh Mills -	0 24						
			Marsh Mills -	Lidford - -	—	19 19					

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.). With Tickets.	Distance of Train Staff System. (3.). Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	* Melton Mowbray to Saxondale, 22 m. 14 ch, included in the Great Northern Company's return. † Exclusive of the following stations, viz., Paddington, West Drayton, Slough, Reading, Swindon, Bath, Bristol, Taunton, Exeter, Newton Abbot, North Road, Mill Bay, Truro, and Penzance. The relief lines (up and down) between Subway Junction, Paddington, and Reading East Junction, and between Reading West Junction and Didcot East Junction are worked on the absolute block system. ‡ Exclusive of the station at Kingswear. ¶ Exclusive of Bodmin Station. § Exclusive of Windsor Station and Aylesbury Station. ‖ Exclusive of Yeovil Station and Salisbury Station.
- - -	- - -	—	—	—	Watlington - -	Princes Risboro' -	8 70	—	—	—	—	
					Cholsey and Moulsford.	Wallingford -	2 52					
					Uffington - -	Faringdon - -	3 50					
					Hallatrow - -	Camerton - -	3 50					
					Swindon Junction	Highworth - -	5 46					
					Dauntsey - -	Malmesbury -	6 43					
					Chippenham -	Calne - - -	5 21					
					Upway Junction	Abbotsbury - -	6 9					
					Heathfield -	Ashton - - -	6 14					
					Churston Junction	Brixham - -	2 1					
					Bodmin Road -	Bodmin - -	3 51					
					Bodmin - -	Boscarne Junction.¶	2 66					
											0 30	From Brentford Passenger. To Brentford Goods.
											0 45	From Clifton May Bank Junction. To Clifton May Bank.
											1 38	From Bristol. To Bristol Harbour.
											0 34	From Portishead To Portishead Pier.
											0 34	From Near St. Thomas Station. To Exeter Basin.
											1 44	From Ashton - To Teignhouse.
											0 60	From Totnes - To Totnes Quay
											0 38	Dunball Siding.
											0 76	Bridgwater Docks.
											7 20	From Tolcarn - To Treamble.
											1 20	From Treamble To Gravel Hill.
											1 6	From Bugle - To Carbis.
											2 50	From St. Denis Junction. To Melangoos Mill.
											4 31	From St. Denis Junction. To Drinnick Mill.
											0 15	From New Quay Junction. To Lane Junction.
											0 14	Tiverton Goods Station.
											0 5	From St. Blazey To Par Wharf.
											2 43	From Carn Brea To Portreath.
											0 43	North Crofty Branch.
											0 70	Roskeare Branch.
											0 50	Hayle Wharf Branch.
											0 12	From Chard Junction. To Chard London and South-Western Railway
											2 54	From Burngullow. To Drinnick Mill.
											0 33	From Reading - To Junction with South-Eastern Railway.
											0 15	Winchester Goods Yard.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
					Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff Service in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
GREAT WESTERN—*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Lidford - -	Launceston - -	—	12 22					
			Yelverton - -	Princetown - -	—	10 44					
			Lipson Junction, Plymouth.	Mount Gould Junction.	0 36						
			Gwinear Road -	Helston - -	—	8 67					
			St. Erth Junction	St. Ives - -	—	4 22					
			Par - - - -	St. Blazey - -	0 33	—					
			Fowey - - - -	New Quay - -	—	24 33					
			Maiden Newton -	Bridport (West Bay)	—	—	—	11 21			
			Brent - - -	Kingsbridge -	—	—	—	12 44			
					433 33	291 66	—	266 10			
			Section 2.—Swindon to New Milford.								
			Swindon - -	New Milford -	207 47†						
			Maindee Junction, East.	Maindee Junction, North.	0 17						
			Cardiff East Box -	East Branch Junction.	0 16						
			Carmarthen Bridge Junction.	Llandyssil‡ -	—	18 60					
			Whitland - -	Cardigan‡ - -	—	25 18					
			Neath Junction -	Neath - -	0 49						
			Landore - -	Swansea* - -	1 23						
			Hafod Junction -	Morriston -	0 15	1 67					
			Llanelly - -	Llandilo - -	—	—	—	18 23			
			Pantyffynnon -	Brynamman -	—	—	—	6 46			
			Grange Court -	Rotherwas Junction.	—	21 45					
			Over Junction -	Ledbury - -	5 24	12 12					
			Churchdown -	Lansdown Junction.	3 10						
			Wye Valley Junction.	Monmouth, Troy -	0 10	14 38					
			Monmouth, Troy -	Coleford - -	—	5 20					
			Llantrissant -	Mwynddy Junction.	0 48						
			Mwynddy Junction.	Mæsaraul Junction	—	0 73					
			Blackmill - -	Gilfach - -	—	4 47					
			Brynmenin -	Pontycymmer -	1 49	—	—	2 78			
			Tondu - -	Abergwynfi -	1 0	—	—	10 52			
			Blaenavon -	Llantarnam Junction.	8 12	—	—	3 31			
			Gaer Junction -	Park Junction -	0 70						
			Ebbw Junction -	Park Junction -	0 56						
			Courtybella Junction.	Nantyglo - -	18 74	—	—	1 43			
			Aberbeeg - -	Ebbw Vale* -	5 79						
			Trevethin Junction.	Talywain Junction	4 13						
			Bassaleg Junction	Brecon and Merthyr Railway.	0 4						
			Penarth Curve -	Penarth Curve, South Box.	0 50						
			Kemble - -	Tetbury - -	—	7 19					
			Bridgend - -	Tondu§ - -	0 35	—	—	2 23			
			Kemble - -	Cirencester - -	—	4 22					
			Cheltenham -	Lansdown Junction.	0 79						
			Risca - - -	Nine Mile Point -	2 26						
			Tondu - -	Brynmenyn -	0 73						
			Brynmenyn -	Nantymoel - -	—	—	—	6 70			
			Tondu N. Box -	Porthcawl§ -	0 32	—	—	8 49			
			Johnston Junction	Old Milford - -	—	3 78					
					266 31	120 19	—	61 15			

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
			Distance of Single Line.				Distance of					
From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
							56 73	—	—	—	32 0	† Exclusive of the following stations, viz., Gloucester, Newport, Cardiff, Bridgend, Neath, Landore, Llanelly, Carmarthen Junction, Whitland, Johnston, and New Milford. ‡ Exclusive of Carmarthen Town Station and Cardigan Station. § Exclusive of Pyle Station and Tondu Station. ¶ Exclusive of Swansea Station and Ebbw Vale Station.

	From	To
1 16	Over Junction.	Gloucester.
0 71	Bullo Branch to Docks.	
4 48	Awre Junction.	New Fancy.
0 29	Alexandra Docks Junction.	Waterloo Junction.
1 70	Mæsaraul Junction.	Brofiskin.
2 54	Penrhiewfer.	Clydach.
1 71	St. David's Crossing.	Dafen.
2 18	Duffryn -	Cross Hands.
1 16	Garnant -	Gwauncaegur-wen.
1 73	Pencoed Branch.	
1 27	Pontycwmmer.	Blaengarw.
0 52	Abergwynfi	Blaenavon,
0 19	Cymmer Junction with South Wales Mineral Railway.	
1 25	Cwmffrwddoer Branch.	
1 79	Cwmnantddu Branch.	
0 45	Tywith -	Blaen Llynvi.
0 56	Swansea -	North Dock.
0 34	Llanelly Dock and Goods Loop.	
0 75	Cwmtillery Branch.	
0 48	Pill Bank Junction.	Newport Docks.
0 72	Cardiff River Side Branch.	
5 35	Cwmbran Junction.	Park Junction.
0 19	Penarth Curve, North.	
0 26	Trosnant Junction.	Junction with Ebbw Vale extension.
0 57	Ebbw Vale	Beaufort.
0 40	Portheawl	Portheawl Docks.
3 68	Pennar Junction.	Mammoel Colliery.
39 43		

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.							On the Permissive Block System.		
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
	m. ch.	m. ch.	Section 3.—Didcot to Chester.		m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
GREAT WESTERN—*continued.*			Didcot Avoiding Line - - -		0 62	—	—	—	- - -	- - -	—
			Didcot West Curve - - -		0 35						
			Didcot Station -	Wellington Junction.*	108 12						
			Shrewsbury (Coton Hill).	Holyhead Junction, Saltney.	40 30						
			Market Drayton Junction.	Nantwich Junction.‖	26 79						
			Abingdon - -	Radley - -	—	2 44					
			Swan Village Junction.	Horseley Field Junction.	1 45						
			Smethwick Junction.	Galton Junction -	0 25						
			Handsworth Junction.	Stourbridge Junction.	8 39						
			Langley Green Junction.	Oldbury - -	1 21						
			Netherton Junction.	Halesowen -	2 64	1 39					
			Lightmoor Junction.	Buildwas - -	2 24						
			Wrexham - -	To end of double line (Brymbo).	2 69						
			Gobowen - -	Oswestry† -	—	2 31					
			Llangollen Junction.	Dolgelly - -	—	44 76					
			Bala Junction -	Blaenau - -	—	25 41					
			Ketley Junction -	Lightmoor Junction.	—	4 41					
			Lightmoor Junction.	Madeley Junction	—	3 76					
			Kidlington - -	Junction with Woodstock Railway.	—	1 12					
			Hatton - -	Honeybourne -	—	—	—	18 30			
					196 25	86 40	—	18 30			
			Section 4.—Wolvercote Junction to Wolverhampton.								
			Wolvercote Junction.	Priestfield‡ -	85 29	—	—	—	- - -	- - -	—
			Stourbridge Junction.	Stourbridge -	0 49						
			Yarnton Junction.	Fairford - -	—	—	—	21 74			
			Kings Sutton Junction.	Chipping Norton Junction.	—	20 7					
			Chipping Norton Junction.	Lansdown Junction.	—	23 17					
			Worcester (Rainbow Junction).	Tunnel Junction, Worcester.	0 28						
			Worcester (Norton Junction).	Abbotswood Junction.	0 61						
			Marsh Farm Junction.	Much Wenlock -	—	14 17					
			Much Wenlock -	Buildwas Junction	—	—	—	3 20			
			Hartlebury - -	Sutton Bridge Junction, Shrewsbury.	—	11 46	—	28 0			
			Droitwich Junction.	Stoke Junction -	4 6						
			Kidderminster Junction.	Bewdley Junction	—	—	—	3 23			
			Bromyard Junction.	Bromyard -	—	10 71					
					91 13	79 78	—	56 37			

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

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Not on either of the foregoing Systems.													
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Sta System. (3.) With Tickets.	Distance of Train Sta System. (3.) Without Ticket.			
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	From	To
- - -	- - -	—	—	—	Bearley - -	Alcester - -	6 40	—	—	—	0 21	Bordesley Junction.	Midland Junction
											0 52	Tipton -	Tipton Basin.
											0 73	Bushbury Junction.	Wolverhampton
											0 70	Stafford Road.	Victoria Basin.
											0 79	Priestfield	Walsall Street.
											0 11	Congreaves Collieries.	
											0 50	Hayes Lane Collieries.	
											3 4	Kingswinford Branch.	
											3 34	Wheatsheaf Junction.	Ffrwd, Brynmally, and Gwersyllt.
											5 28	Brymbo Crossing.	Mineraand Vron.
											0 14	Wednesbury Junction.	South Staffordshire Line.
											0 25	Stratford Goods Shed.	
											0 24	Stourbridge Goods Shed.	
											0 67	Withymoor Branch.	
											0 23	Swan Village Basin Branch.	
											1 61	Legacy Colliery.	Aberderfyn Brick Works.
											0 14	Branch to Saltney Coal Stage.	
											0 56	Saltney Goods Junction.	Saltney Quay Wall.
							6 40	—	—	—	20 66		
- - -	- - -	—	—	—	Moreton-in-Marsh	Shipton-on-Stour-	9 18	—	—	—	0 29	From Witney -	To Goods Shed.
							9 18	—	—	—	0 29		

* Exclusive of the following stations, viz., Oxford, Birmingham, Wolverhampton, Ruabon, and Wrexham.
† Exclusive of Oswestry station.
‖ Exclusive of Market Drayton station.
‡ Exclusive of the following stations, viz., Honeybourne, Worcester, Stourbridge Junction, and Dudley.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
					Distance of Single Line.						
	Consisting of Two or more Lines of Rails	Consisting of a Single Line of Rails only	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
			Section 5.—Worcester to Swansea.								
GREAT WESTERN—*continued.*	m. ch.	m. ch.	Worcester -	Shelwick Junction	m. ch. 25 67	m. ch. —	m. ch. 1 56	m. ch. —	- -	- - -	m. ch. —
			Tenbury - -	Bewdley - -	—	—		15 21			
			Ross - -	Little Mill Junction.	—	28 51					
			Kington Junction	Kingsland -	—	5 0					
			Kingsland - -	Kington - -	—	8 28					
			Rotherwas Junction.	Barrs Court (Ayleston Branch).	1 3						
			Gelly Tarw - -	Mardy Junction -	0 57	5 23					
			Pontypool Road (North Junction).	Maindee Junction West.	8 55						
			Neath Junction	Swansea (South Dock).	8 14						
			Hereford (Red Hill Junction).	Glynneath* - -	62 67	—	0 64				
			Glynneath - -	Neath Junction -	8 38						
			Pontypool Road East Junction.	Pontypool Road North, No. 2.	1 6						
			Mardy Junction -	Merthyr† - -	0 23						
					117 10	47 22	2 40	15 21			
Summary:—											
Section 1 - -					433 33	291 66	—	266 10	- - -	- - -	—
„ 2 - -					266 31	120 19	—	61 15			
„ 3 - -					196 25	86 40	—	18 30			
„ 4 - -					91 13	79 78	—	56 37			
„ 5 - -					117 10	47 22	2 40	15 21			
Goods Lines† -					‡	‡					
	1,104 32	1,141 33			1,104 32	625 65	2 40	417 33			

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for Goods and Mineral Traffic only.	Remarks.	
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of. System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Tickets.			
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.		
		—	—	—	Kington - -	New Radnor -	6 42				1 25	From Crumlin Junction.	To Llanhilleth.
					Titley - -	Eardisley - -	6 75				0 60	Maesycwmmer.	Fleur-de-Lis.
					Titley - -	Presteign - -	5 53						
					Leominster -	Steens Bridge -	3 74				0 50	Quaker's Yard.	Quaker's YardLow-Level Bridge.
											2 71	Dare Junction.	Amman.
											1 63	Dare Junction.	Bwllfa.
											0 28	Pontypool Road West.	Pontypool Road, South Jn.
											0 17	Pontypool Road South.	Coedygric.
											—		* Exclusive of the station at Pontypool Road.
							23 4	—	—	—	7 74		† Exclusive of Merthyr Station.
													‡ *Goods and Mineral Line worked on the Block System.*
												From	To Double
		—	—	—			56 73	—	—	—	32 0	Section 1.	
							—	—	—	—	39 43	Acton - -	Acton Wells Jn. 0 46
							6 40	—	—	—	20 66	Frome Mineral Loop	0 26
							9 18	—	—	—	0 29	Laira - -	Coxside 1 63
							23 4	—	—	—	7 74	Section 2.	
							—	—	—	—	43 37	Pontypool South Jn.	Panteg - 0 67
												Courtybella Junction.	Park Jn. 0 73
							95 55	—	—	—	144 9	Brynmenyn Loop	0 19
												Section 5.	
												Gelly Tarw Jn.	Dare Jn. 0 11
												Barrs Court Junction.	Red Hill Jn. Hereford. 2 57
													7 42
												Section 1.	Single
												Portreath	Incline. 0 37§
												Penwithers -	Newham 2 33§
												Section 2.	
												Bullo -	Cinderford & Churchway. 6 31
												Gellyrhaidd Ely Valley.	Gilvach Goch. 2 50§
												Gellyrhaidd Jn.	Gellyrhaidd Ely Valley. 1 24§
												Mwynddy Jn.	Penrhiewfer. 5 68§
												Pyle Junc. (L. & O.)	Pyle (L. & O.) 0 7§
												Longdyke Jn.	Roath Jn. 1 17
												Llanharran	Black Mill 8 24*
												Swansea (V.N.)	Swansea Eastern Depôt. 0 29§
												Llanelly -	Morfa Jn. 1 61§
												Tondu Loop,	third rail 0 16§
												Section 3.	
												Croesnewydd South Fork.	Croesnewydd Jn. 0 18
												Moss Valley	Line. 1 63
												End of double line.	Brymbo Crossing. 0 20§
												Section 5.	
												Gelly Tarw Jn.	Dare Jn. 2 38§
												Hereford, Barton.	Towards Hay. 0 19§
													m. ch. 35 75
												Total mileage	43 37

* Worked on Electrical Train Staff System.

§ 18 m. 20 ch. worked on the Absolute Block System, without Train Staff.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
HAMMERSMITH AND CITY.	m. ch. 2 77	m. ch. —	Westbourne Park	Hammersmith and Shepherd's Bush Junction.	m. ch. 2 77	m. ch. —	m. ch. —	m. ch. —	- - -	- - -	m. ch. —
HULL, BARNSLEY, AND WEST RIDING JUNCTION RAILWAY AND DOCK.	55 60	—	Hull, Alexandra Dock.	Cudworth - -	54 16	—	—	—	- - -	- - -	—
			Hensall Junction,	Gowdall Junction	0 40						
			Beverley Road (Hull).	Cannon Street -	1 4						
					55 60						
ISLE OF WIGHT -	1 0	10 27	Ryde - -	Ventnor - -	1 0	—	—	10 27	- - -	- - -	—
Brading Harbour Railway.	—	2 61									
	1 0	13 8									
ISLE OF WIGHT CENTRAL.	—	33 60	Ryde - -	Newport - -	—	8 60	—	—	- - -	- - -	—
			Cowes - - -	Sandown - -		13 0					
			Newport - -	Freshwater -		12 0					
						33 60					
LANCASHIRE AND YORKSHIRE.	456 30	16 19	Victoria Station, Manchester.	Goose Hill Junction, Normanton.	50 31½	—	—	—	Through Victoria Station -		—
			Wakefield (Whitham's Sidings).	Goole (Mineral Junction).	27 9½	—	—	—	Through Wakefield Station.		
			Miles Platting -	Staley Bridge -	6 40½						
			Milner Royd Junction.	Bradford - -	11 15½						
			Low Moor - -	Mirfield and Thornhill.	10 17						
			Dryclough Junction.	Stainland - -	2 63						
			Springwood Junction.	Penistone - -	12 70½						
			Todmorden (including Fork).	Gannow Junction, Burnley.	9 53½						
			Rochdale via Oldham	Middleton Junction.	9 58						
			Royton Junction	Royton - -	1 15½						
			Middleton Junction.	Middleton -	1 2½						
			Rochdale - -	Facit - -	1 0	4 8½					
			Facit - -	Bacup - -	3 3½						
			Victoria (4 lines of rails).	Newton Heath -	2 24½						
			Dewsbury Junction (including Fork).	Dewsbury - -	1 42½						
			Horbury Junction	Barnsley - -	8 1½						
			Woolley Tunnel -	- - -	—	0 79					
			Sowerby Bridge -	Ripponden -	3 0½						
			Ripponden - -	Rishworth - -	—	0 60					
			Clayton West Branch	- - -	—	3 37½					
			Pontefract - -	Methley Junction	4 51½						
			Victoria Station, Manchester.	Bury Junction, Bolton.	10 53½						
			Sandhills - -	Southport - -	17 4½						
			Southport - -	Wigan - -	16 75½						
			Ormskirk - -	Rainford Junction.	5 78½						
			Walton Junction	Preston - -	27 70						
			Preston Junction	Colne - -	24 26½						
			Bolton (Blackburn Junction).	Hellifield - -	38 8½	—	—	—	Through Blackburn Station.		
			Liverpool (Exchange).	Castleton - -	40 9½	—	—	—	Through Bolton Station.		
			Great Harwood -	Padiham Junction, Rose Grove.	9 3						
			Clifton Junction -	Accrington -	18 51½						
			Lostock Junction	Euxton Junction -	11 70						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only*.	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of. System as above. (1.)	Distance of. Train Porter System. (2.)	Distance of. Train Staff System. (3.) With Tickets.	Distance of. Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	9 77	
											9 77*	* Including 8 m. 32 ch. worked on the Absolute Block System.
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
					Brading - -	Bembridge - -	—	—	—	2 61	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	Lockwood Junction.	Meltham - -	—	—	—	3 43½	0 42½	Clitheroe Line Siding.
					Tottington Branch - - -		—	—	—	3 30½	1 27	Silkstone Branch.
											0 71	Oldham Road Branch.
											0 26½	Beswick Branch.
											2 15½	Hoddlesden Branch.
											1 0½	Heap Bridge Branch.
											0 60½	North Docks Branch.
											0 18	Blackburn (King Street) Branch.
											1 77½	Kersley Branch.
											1 88	Astley Bridge Branch.
											1 0	Bankfield Branch.
											0 37	Great Howard Street Old Line.
											0 47½	Fleetwood Dock Branch.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - -									
			On the Absolute Block System.							On the Permissive Block System.		
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.		From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.				
LANCASHIRE AND YORKSHIRE — *continued.*			Crow Nest Junction.	Horwich Fork Junction.	3 13¾							
			Stubbins Junction	Bacup - -	7 38							
			Cheetham Hill Junction.	Bradley Fold - (Including Radcliffe 2 Forks).	8 74							
			Knottingley -	Askern - -	10 41½							
			Hollinwood Branch - - -		4 5½							
			Oakenshaw Branch - -		0 44¾							
			Brighouse - -	Wyke - -	3 71¾							
			Brockholes Junction.	Holmfirth -	1 68							
			Ardwick Branch - - - -		1 69½							
			North Mersey Branch - - -		5 38							
			Windsor Bridge Junction.	Crow Nest Junction.	13 74½							
			Blackrod - -	Horwich, including Fork.	1 61¾							
			Hindley Junction	Pemberton Junction.	3 38½							
			Dobbs Brow Junction.	Dicconson Lane Junction.	1 24½							
			Moss Lane Junction.	Farington Curve Junction.	1 16							
					456 30	9 25½						
LANCASHIRE AND YORKSHIRE AND LONDON AND NORTH-WESTERN JOINT LINES:—												
North Union -	5 71	—	Euxton Junction	Preston - -	5 71	—	—	—		Through Preston Station -		—
Preston and Wyre	36 49	—	Throughout.		36 49	—	—	—		- - -	- - -	—
Preston and Longridge.	—	7 74	- - -	- - -	—	—	—	—		- - -	- - -	—
Ovenden Branch and Methley Joint. *See* Great Northern.												
Lancashire and Yorkshire and Lancashire Union Joint Line.	12 31	—	Cherry Tree Junction.	Chorley Junction	12 31	—	—	—		- - -	- - -	—
	0 48	—	Spring Wood Junction.	Huddersfield -	0 48	—	—	—		- - -	- - -	—
Lancashire and Yorkshire and Great Northern Railway.	0 43	—	Leeds Joint -	- - -	0 43	—	—	—		- - -	- - -	—
Halifax High Level, *see* Great Northern.												
Total -	56 2	7 74			56 2	—	—	—				—
LISKEARD AND CARADON.	- -	6 74	- - -	- - -	—	—	—	—		- - -	- - -	—
LONDON AND NORTH WESTERN.	1,441 7	306 22	Euston - -	Stafford - -	133 40	—	—	—		- - -	- - -	—
			Roade Junction -	Rugby - - -	25 12							
			Kentish Town Junction.	Willesden (Harlesden Junction).	4 53							
			Harlesden Junction.	North Pole Junction.	1 14							
			Willesden High Level Junction.	Acton Wells Junction (North and South - West Junction Railway).	0 56							
			Kensal Green Junction.	Willesden (No. 2 Cabin).	0 26							
			Willesden (No. 1 Cabin).	Willesden (Mitre Bridge Junction).	0 27							
			Watford - -	St. Albans -	—	7 0						
			Watford - -	Rickmansworth -	—	4 40						
			Cheddington -	Aylesbury - -	—	7 20						
			Leighton - -	Dunstable -	7 0							
			Bletchley -	Oxford - -	31 40							

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
										6 74	12 30¾	
- - - -		—	—	—	- - -	-	—	—	—	—	—	
- - - -		—	—	—	- - -	- - -	—	—	—	—	—	
- - - -		—	—	—	Preston - -	Longridge -	—	—	7 74	—	—	
- - - -		—	—	—	- - -	- - -	—	—	—	—	—	
- - - -		—	—	—	- - -	- - -	—	—	—	—	—	
- - - -		—	—	—	- - -	- - -	—	—	—	—	—	
							—	—	7 74			
- - - -		—	—	—	Moorswater -	Looe - -	6 74	—	—	—	12 5	
- - - -		—	—	—	Wolverton -	Newport Pagnell -	3 70	—	—	—	—	
					Harlesden Loop Line - - -		—	—	—	—	1 3	Double.
					Queen's Park -	Kilburn Up Loop	—	—	—	—	0 55	Single.
					Willesden Low Level Loops - -		—	—	—	—	1 32	Do
					Willesden (Brent Junction).	Willesden, No. 8, High Level Loops.	—	—	—	—	0 64	„
					Willesden (Brent Junction).	Willesden, No. 8, Auxiliary Loops.	—	—	—	—	1 32	„
					Heyford Loop Lines - - -		—	—	—	—	0 60	„
					Gayton Down Loop Line - -		—	—	—	—	0 39	Single.
					Gayton Up Loop Line - - -		—	—	—	—	0 37	„
					Rugby (Clifton Road Bridge).	Hillmorton (Up Loop Line).	—	—	—	—	1 50	„
					Rugby „ -	Hillmorton (Up Northampton Loop Line).	—	—	—	—	1 50	„
					Rugby „ -	Leamington Junction Loop.	—	—	—	—	1 16	„
					Ainington Down Loop Line - -		—	—	—	—	0 56	

One line 63 chains. Other line 49 chains.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under WORKED BY TELEGRAPH - - - - - - - - -							
			On the Absolute Block System.					On the Permissive Block System.		
						Distance of Single Line.				
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
LONDON AND NORTH-WESTERN—*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Verney Junction -	Banbury - -	—	—	—	21 39			
			Bletchley - -	Bedford - -	16 0						
			Bedford - - -	Sandy - -	—	—	—	8 40			
			Sandy - -	Cambridge -	21 20						
			Nuneaton -	Blaby Junction -	15 40						
			Weedon - -	Daventry - -	—	4 0					
			Blisworth -	Peterborough -	47 21						
			Duston (West Junction).	Market Harboro'	18 43						
			Rugby - -	Yarwell Junction, Wansford.	43 21						
			Northampton (Bridge Street Junction).	Duston (North Junction).	0 20						
			Seaton - -	Luffenham -	3 60						
			Rugby - -	Stafford, via Stour Valley.	57 14						
			Coventry - -	Nuneaton - -	9 61						
			Dudley Port -	Sedgley Junction	0 33						
			Birmingham (Proof House Junction).	Pleck Junction (Bescot Loop).	9 35						
			Aston - - -	Lichfield, via Sutton Coldfield.	13 56						
			Bescot Junction -	Wednesbury Junction (Bescot Curve).	0 35						
			Bescot Junction -	Bushbury - -	6 60						
			Dudley - -	Wichnor - -	23 46						
			Walsall - -	Rugeley, Trent Valley.	14 27						
			Aston (Stechford Junction).	Stechford - -	2 60						
			James Bridge Junction.	Pleck Junction -	1 12						
			Bloomfield Junction.	Wednesbury (Prince's End Junction).	2 76						
			Tipton Curve Junction.	Tipton (Stour Valley).	0 18						
			Rugby - -	Berkswell Junction.	24 57						
			Kenilworth Junction.	Coventry - -	—	—	—	3 78			
			Portobello Junction.	Heath Town Junction.	1 24						
			Perry Barr Station Junction.	Soho Soap Works Junction.	2 66						
			Perry Barr North Junction.	Handsworth Junction.	0 6						
			Soho East Junction.	Harborne Junction.	0 21						
			Stafford - -	Euxton Junction	70 9						
			Kenyon Junction	Edgehill Junction	16 58						
			Huyton Junction	Spring's Branch Junction.	12 62						
			Spring's Branch Junction.	Tyldesley - -	6 20						
			Weaver Junction	Lime Street -	18 79						
			Broadheath -	Ditton Junction -	18 20						
			Widnes - -	St. Helen's - -	6 40						
			Edgehill - -	Canada Dock -	4 53						
			Alexandra Dock Junction.	Alexandra Dock -	1 11						
			Halton Junction	Frodsham Junction.	1 53						
			Preston Junction	Golborne Junction.	0 52						
			Winwick Junction	Earlestown Junction.	1 37						
			Ince Moss Junction.	Platt Bridge Junction.	0 43						
			Kenyon Junction	Bolton - -	9 70						
			Atherton Junction	Chowbent West Junction.	0 20						
			Atherton Junction	Chowbent East Junction.	0 20						

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Not on either of the foregoing Systems.						Distance of					
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m ch.	
					Leighswood Junction.	Aldridge Colliery	—	—	—	—	2 40	Single.
					Norton Junction	Norton Crossing	—	—	—	—	2 60	Double.
					Norton Crossing	East Cannock Junction.	—	—	—	—	3 0	Single.
					Hawkesbury Lane	Wyken Colliery	—	—	—	—	0 70	„
					Griff Junction	Stanley's Colliery	—	—	—	—	1 49	„
					Soho Road	Soho Pool	—	—	—	—	0 51	„
					Aston Junction	Windsor Street	—	—	—	—	1 0	Double.
					Littleworth Junction.	Cross Keys Junction.	—	—	—	—	0 41	Single.
					Wolverhampton (Crane Street Junction Box).	Wolverhampton (Culwell Street Box).	—	—	—	—	0 34	Double.
					Burton (Stretton Junction).	Burton (Shobnall Road Junction).	—	—	—	—	1 79	„
					Darlaston Junction, Wednesbury.	Portway Crossing	—	—	—	—	0 39	Single.
					Portway Crossing	Rose's Siding	—	—	—	—	0 16	Double.
					Rose's Siding	Darlaston Steel and Iron Company's Siding.	—	—	—	—	1 15	Single.
					Darlaston Steel and Iron Company's Siding.	Falling's Heath	—	—	—	—	0 27	Double.
					Falling's Heath	James Bridge Junction.	—	—	—	—	0 20	„
					Pemberton Junction.	Brynn Junction	—	—	—	—	2 43	„
					Spring's Branch		—	—	—	—	3 65	„
					Wapping Tunnel		—	—	—	—	1 49	„
					Waterloo Tunnel		—	—	—	—	2 62	„
					Widnes (Carter House Junction).	Widnes (West Deviation Junction).	—	—	—	—	1 0	„

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
LONDON AND NORTH-WESTERN—*continued.*	m. ch.	m. ch.	Northwich - -	Sandbach - -	m. ch. —	m. ch. —	m. ch. —	m. ch. 9 20			m. ch.
			Rainford Junction	Rainford Village -	—	1 0					
			Rainford Village -	Gerrard's Bridge Junction.	3 11						
			St. Helen's Junction.	Sutton Oak Junction.	0 40						
			Timperley Junction.	Broadheath Junction.	0 25						
			Allerton (Garston Junction).	Garston Junction with Cheshire Lines.	1 1						
			Winsford Junction	Over and Wharton Station.	1 0						
			Hartford Junction	Greenbank Junction.	0 68						
			Walton Junction	Arpley Junction -	1 5						
			Fir Tree House Junction.	Haigh Junction -	5 19						
			Bamfurlong Junction.	Amberswood West Junction.	1 17						
			Standish Junction	Whelley Junction	1 20						
			Bickershaw Junction.	Strangeways East	0 50						
			Kenyon Junction	Manchester (Exchange Station).	12 66						
			Eccles Junction -	Bolton - -	8 0						
			Crewe - - -	Manchester, London Road.	31 0						
			Cheadle Hulme -	Macclesfield -	9 45						
			Buxton - -	Edgeley Junction	18 66						
			Edgeley Junction	Northenden Junction.	8 0						
			Heaton Norris Junction.	Guide Bridge -	5 35						
			Denton Junction	Crowthorn Junction.	1 18						
			Denton Junction	Dukinfield - -	1 26						
			Ashton Junction -	Stalybridge - -	1 49						
			Droylsden - -	Ashton Moss Junction.	2 0						
			Stalybridge - -	Heaton Lodge -	21 43						
			Greenfield -	Mumps Junction	3 68						
			ThornhillJunction	Leeds (Copley Hill).	10 0						
			Wortley Junction	Leeds (Canal Box).	1 0						
			Bradley Wood -	Bradley Junction	1 17						
			Davenport Junction.	Cheadle Village Junction.	0 73						
			Roe Green Junction.	Pennington Junction.	7 16						
			Kirkburton Junction.	Kirkburton -	—	4 26					
			Birstall Junction	Birstall Station -	—	1 71					
			Middlewood Curve - - - -		0 33						
			Delph Junction -	Delph Station -	—	1 51					
			Stalybridge - -	Diggle - -	7 67						
			Preston - -	Carlisle - -	89 54						
			Oxenholme - -	Windermere - -	10 20						
			Low Gill Junction	Ingleton - -	18 72						
			Morecambe South Junction.	Morecambe -	1 71						
			Bare Lane - -	Hest Bank - -	—	1 32					
			Lancaster - -	Glasson Dock -	—	4 75					
			Whitehaven -	Maryport Level Crossing.	12 14						
			Workington (Derwent Junction).	Cockermouth Junction.	7 54						
			Crewe - -	Holyhead - -	105 24						
			Mold Junction -	Denbigh - -	25 79						
			Denbigh - -	Corwen - -	—	18 58					
			Foryd Junction -	Denbigh Junction	—	9 1					
			Llandudno Junction.	Llandudno -	3 14						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph.				Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only*	Remarks.
Not on either of the foregoing Systems.						Distance of					
From		Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System (3.) With Tickets.	Train Staff System (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
					Parkside	Lowton Junction	—	—	—	—	0 20	Double.
					Ravenhead Branch		—	—	—	—	2 22	Single.
					Pocket Nook Branch		—	—	—	—	0 60	„
					Broad Oak Branch		—	—	—	—	0 20	„
					Haydock Junction	Old Fold	—	—	—	—	1 0	„
					Havannah Branch		—	—	—	—	1 26	„
					Moss Hall Branch		—	—	—	—	0 65	„
					Dallam Branch		—	—	—	—	0 60	„
					St. Helen's Junction.	Sutton Bank Clock Face.	—	—	—	—	0 60	„
					Runcorn Dock Branch		—	—	—	—	1 79	„
					Diggles Junction	Diggles Siding	—	—	—	—	1 0	„
					Sutton Oak Junction.	Carr Mill Junction	—	—	—	—	3 25	Double.
					Edge Lane Junction.	Olive Mount Junction.	—	—	—	—	0 44	„
					Speke Junction	Garston Junction	—	—	—	—	0 70	„
					Garston Dock Branches		—	—	—	—	1 76	Single.
					Bickershaw Junction.	Pennington Junction.	—	—	—	—	3 37	Double.
					Edgehill Circular Lines		—	—	—	—	1 20	„
					Edgehill (Pighue Lane).	Exhibition Sidings Junction.	—	—	—	—	0 30	„
					Huyton Quarry	Halsnead Colliery	—	—	—	—	0 40	Single.
					Earlestown (Liverpool Junction).	Earlestown (Viaduct).	—	—	—	—	0 8	„
					Ince Moss	Bamfurlong Sidings.	—	—	—	—	0 40	Double.
					Bamfurlong Sidings.	Platt Bridge Junction.	—	—	—	—	0 20	Double.
					Do.	Fir Tree	—	—	—	—	0 20	Single.
					Wortley Junction	Farnley Iron Works.	—	—	—	—	1 0	„
					Hindlow	Cromford	—	—	—	—	21 0	„
					Little Hulton Mineral Branch		—	—	—	—	1 11	„
					Patricroft	Molyneux Junction.	—	—	—	—	3 43	Double.
					Maryport Dock Junction.	Maryport Dock	—	—	—	—	0 70	Single.
					Holyhead	Holyhead Pier	1 5	—	—	—	—	Worked by Telegraph.
					Foryd	Foryd Pier	—	—	—	—	0 61	Single.
					Padeswood	Coppa Siding	—	—	—	—	0 20	Double, worked by Telegraph.
					Coppa Siding	Coed Talon	—	—	—	—	2 10	Single.
					Coed Talon	Tryddyn Junction	—	—	—	4 22		
					Coed Talon	End of London and North-Western Line on Ffrith Branch.	—	—	—	—	1 13	„
					Junction with Ffrith Branch.	Junction with Mold and Tryddyn Branch.	—	—	—	—	0 26	Single.
					Prestatyn	Dyserth	—	—	—	—	2 60	„
					Pen-y-groes	Nantlle	—	—	—	1 34		
					Penrhyn Junction	Port Penrhyn	—	—	—	—	1 22	„

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
LONDON AND NORTH-WESTERN—*continued.*			Llandudno Junction.	Blaenau Festiniog	—	27 27					
			Bangor - -	Bethesda - -	—	4 22					
			Menai Bridge -	Carnarvon Quay Junction.	7 57						
			Carnarvon Quay Junction.	Llanberis - -	—	8 33					
			Carnarvon Quay Junction.	Afonwen - -	—	—	—	18 0			
			Gaerwen - -	Amlwch - -	—	17 46					
			Crewe (Salop Junction).	Shrewsbury (Crewe Junc.).	32 26						
			Whitchurch (Chester Junction).	Tattenhall Junction (Crewe and Chester Line).	14 15						
			Wellington Junction (East).	Stafford S. U. Junction.	18 32						
			Hadley Junction -	Coalport - -	—	7 63					
			Abergavenny Junction.	Nantybwch - -	13 74						
			Rhymney Bridge -	Morlais Junction	4 23						
			Penywern Junction.	Dowlais, Ivor Junction.	0 14						
			Brynmawr -	Garndiffraith Junction.	—	7 69					
			Garndiffraith Junction.	Abersychan (Junction with London and North-Western and Great Western Joint Line	0 19						
			Ebbw Vale Junction.	Ebbw Vale -	—	—	—	1 40			
			Nantybwch - -	Tredegar (South End).	—	—	—	2 13			
			Tredegar (South End).	Nine Mile Point -	13 33						
			Tredegar Junction (London and North-Western).	Tredegar Junction (Great Western Railway).	0 17						
			Craven Arms -	Knighton - -	12 17						
			Knighton - -	Llanbister Road -	—	—	—	9 32			
			Llanbister Road -	Penybont Junction.	6 8						
			Penybont Junction.	Penybont - -	—	—	—	0 44			
			Penybont - -	Llandrindod -	3 42						
			Llandrindod -	Llandovery - -	—	—	—	27 37			
			Pontardulais -	Gorseinon - -	3 20						
			Gorseinon - -	Gowerton - -	—	—	—	1 63			
			Gowerton - -	Llanmorlais -	—	5 1					
			Gowerton - -	Swansea - -	7 27						
			Abergwilli Junction.	Carmarthen Valley Junction, Llandilo.	—	—	—	13 25			
					1,289 31	143 75	—	117 31			
			Two extra lines— Camden -	Roade - -	58 40						
			Stafford - -	Crewe - -	24 4						
			Huyton Quarry -	Liverpool, Lime Street.	5 53						
			Widnes - -	Wavertree Junction.	9 46						
			Bamfurlong Junction.	Golborne Junction	3 48						
			Ince Moss Junction.	Carr Mill Junction.	5 0						
			Hillhouse - -	Heaton Lodge -	3 14						
			Longsight - -	Heaton Norris -	3 15						
			Heaton Norris Junction.	Denton Junction -	4 22						
			Heaton Norris (No. 3 Box).	Stockport (No. 2 Box).	0 47						
			Stockport - -	Edgeley Junction	0 23						
			Cross Lane	Barton Moss -	4 2						
			Ardwick -	Hyde Road -	0 43						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

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From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of: System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
					Waenavon -	Waenavon Colliery.	—	—	—	—	0 60	Single.
					Blaenavon -	Varteg Hill Colliery.	—	—	—	—	1 44	"
					Brynmawr - -	Nantyglo - -	—	—	—	—	1 35	"
					Cwm Bargoed Junction.	Engine Shed Siding (Cwm Bargoed Branch).	—	—	—	—	0 52	"
					Dowlais Top (L. & N.W.).	Dowlais Top (B. & M.).	—	—	—	—	0 15	
					Three extra lines— Crewe North Junction.	Crewe Coal Yard -	—	—	—	—	0 45	
					Bamfurlong Junction.	Spring's Branch Junction.	—	—	—	—	1 8	
					Two extra lines— Crewe North Junction.	Sydney Bridge -	—	—	—	—	1 13	
					Warrington Station.	Winwick Junction	—	—	—	—	3 47	
					Platt Bridge Junction.	Spring's Branch -	—	—	—	—	0 74	
					Coppull Station -	Darlington's Siding.	—	—	—	—	0 25	
					Spring's Branch Junction.	Wigan (Canal Box).	—	—	—	—	0 68	
					Sutton Oak Junction.	Clock Face Sidings	—	—	—	—	1 0	
					Sutton Oak Junction.	St. Helen's Junction.	—	—	—	—	0 40	
					Pocketnook Junction.	St. Helen's Station.	—	—	—	—	0 16	
					Hyde Road -	Ardwick - -	—	—	—	—	0 43	
					Hillhouse No. 1 -	Hillhouse No. 2 -	—	—	—	—	0 20	
					Chelford Up and Down Loops - -		—	—	—	—	0 69	
					Diggle Up and Down Loops - - -		—	—	—	—	0 23	
					Eccles Junction and Patricroft Up and Down Loops.		—	—	—	—	0 32	
					Eccles Junction and Monton Green Up and Down Loops.		—	—	—	—	0 59	
					Buxton - -	Hindlow - -	—	—	—	—	3 40	
					One extra line— Dudley Port -	Dudley - -	—	—	—	—	1 9	
					Basford Wood -	Crewe South Junction.	—	—	—	—	0 60	
					Hartford Station -	Hartford Junction.	—	—	—	—	0 69	
					Ince Moss Junction.	Spring's Branch Junction.	—	—	—	—	0 35	
					Lea Green -	Rainhill - -	—	—	—	—	1 5	
					Top of Whiston -	Point west of Rainhill.	—	—	—	—	0 27	
					Wigan Canal Box	Wigan Station -	—	—	—	—	0 50	
					Adswood - -	Edgeley Junction	—	—	—	—	0 76	
					Huddersfield -	Hillhouse (Fifth line).	—	—	—	—	0 30	
					Ashbridge - -	Jubilee Sidings, No. 1 Loop.	—	—	—	—	0 66	
					Ashbridge - -	No. 2 Loop -	—	—	—	—	0 38	
					Jubilee Sidings -	Heaton Norris (No. 2 Box).	—	—	—	—	0 19	
					Jubilee Sidings -	Heaton Norris (No. 1 Box).	—	—	—	—	0 36	
					Heaton Norris (No. 2 Box).	Heaton Norris (No. 3 Box).	—	—	—	—	0 15	
					Stockport (No. 1 Box).	Edgeley Junction (No. 2 Box).	—	—	—	—	0 20	
					Tyldesley No. 1 -	Hough Lane No. 1	—	—	—	—	0 62	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.							On the Permissive Block System.		
					Distance of Single Line.							
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.		From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.				m. ch.
LONDON AND NORTH-WESTERN—*continued.*			Cross Lane -	Ordsall Lane -	1 0							
			Ordsall Lane -	Manchester Exchange Station.	1 0							
			Golcar - -	Hillhouse - -	3 41							
			Golcar - -	Marsden - -	4 41							
			One extra up line—Nuneaton - -	Rugby - -	—	—	14 20					
					1,421 73	143 75	14 20	117 31				
Joint Lines.												
Whitehaven, Cleator, and Egremont.			Whitehaven, Mirehouse Junction.	Marron Junction -	15 69							
			Moor Row Junction.	Gutterby -	—	1 4						
			Gutterby -	Egremont - -	1 27							
			Egremont - -	Sellafield - -	—	5 16						
			Parton -	Distington -	—	3 0						
London and North-Western and Great Western.			Abersychan and Talywain (Junction with London and North-Western Railway).	Abersychan and Talywain (Junction with Great Western Railway).	0 27							
Rhymney Joint Railway.			Nantybwch - -	Rhymney Bridge	1 51							
			Rhymney Bridge -	Rhymney - -	—	—	—	1 41				
Merthyr Extension Joint Line.			Morlais Junction	Rhydycar Junction.	—	—	—	4 61				
			Lines worked.									
Harborne Railway.			Harborne Junction.	Harborne - -	—	2 35						
Harrow and Stanmore Railway.			Harrow - -	Stanmore - -	—	2 8						
Dundalk and Greenore. *See* Ireland.												
Grand Total -	1,441 7	306 22			1,441 7	157 58	14 20	123 53				
LONDON AND NORTH-WESTERN AND GREAT WESTERN JOINT.	112 73	44 64	Shrewsbury (Crewe Junction).	Hereford (South end of Station).	50 75	—	—	—				—
			Hereford (Rotherwas Junction).	Hereford (Redhill Junction).	2 10							
			Woofferton Junction.	Tenbury - -	—	—	—	5 4				
			Shrewsbury (English Bridge Junction).	Shrewsbury (Abbey Foregate Junction).	0 26							
			Shrewsbury (Sutton Bridge Junction).	Cruckmeole Junction.	4 52							
			Shrewsbury (Severn Bridge Junction).	Wellington (Stafford Junction).	10 52							
			Cruckmeole Junction.	Minsterley - -	—	4 48						
			Cruckmeole Junction).	Buttington - -	—	—	—	11 51				
			Chester Tunnel Box.	Walton Junction	17 33							
			Chester - -	Birkenhead (Woodside).	15 25							
			Hooton - -	Helsby - - -	8 74							
			Hooton - -	Park Gate -	—	4 54						
			Park Gate - -	West Kirby -	—	—	—	7 16				
			Hereford (Brecon Curve Junction).	Hereford (Barton and Brecon Curve Junction).	0 18							
			North Pole Junction.	Kensington, Earls Court Junction.	2 28							
			Llandovery -	Llandilo - -	—	—	—	11 8				
	112 73	44 64			112 73	9 22	—	34 78				
LONDON AND NORTH-WESTERN AND MIDLAND.* (Ashby and Nuneaton Joint Line.)	19 45	5 45	Coalville - -	Shackerstone Junction.	0 46	—	—	5 45				—
			Moira - -	Nuneaton - -	18 79							
					19 45	—	—	5 45				

* Inserted from the Return made by the Midland Railway Company.

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch so worked.)

Worked by Telegraph. — Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of. System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
					Mowbray Junction, Frizington.	Mowbray	—	—	—	—	0 58	Single.
					Bigrigg Junction	Pallaflat and Bigrigg.	—	—	—	—	2 1	„
					Moor Row, Crossfield Junction.	Cleator Moor, Birks Bridge.	—	—	—	—	1 1	„
					Distington	Ullock Junction	—	—	—	—	4 32	„
					Gilfoot Branch		—	—	—	—	0 57	„
					Eden Valley Branch		—	—	—	—	0 40	„
					Eskett Branch		—	—	—	—	0 25	„
					London and North-Western and Brecon and Merthyr Joint— Rhydycar	Taff Vale Junction (Merthyr).	—	—	—	—	0 51	„
							4 75	—	—	5 56	143 74	
		—	—	—	Ludlow	Clee Hill	—	—	—	—	6 0	* Double line and worked on the absolute block telegraph system.
					Birkenhead (Green Lane Junction).	Birkenhead (Monks Ferry).	—	—	—	0 44		† Worked by gong communication.
					Birkenhead (Green Lane Junction).	Birkenhead (Brook Street Junction).	—	—	—	—	*0 61	‡ Worked on permissive block system.
					Birkenhead (Brook Street).	Birkenhead (Canning Street South).	—	—	—	—	†0 13	*Note.*—Wellington, Hereford (goods lines), Leominster, Ludlow, Tenbury, Craven Arms, Shrewsbury, and Chester Stations are included in the distances worked by telegraph on the "absolute block system," although actually worked by "gong communication and other systems."
					Birkenhead (Brook Street).	Birkenhead (Cathcart Street).	—	—	—	—	†0 30	
					Brymbo Junction	Coed Talon Junction.	—	—	—	—	*2 67	
					Ledsham (Station Box).	Ledsham (Sand Siding Box).	—	—	—	—	‡0 51	
							—	—	—	0 44	10 62	
		—	—	—			—	—	—	—	—	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.	
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.	
LONDON AND SOUTH-WESTERN.	642 75	223 31	Waterloo - -	Southampton -	78 60	—	—		- - -	- -	—	
			Southampton -	Dorchester - -	62 20							
			Dorchester - -	Weymouth -	7 0							
			Ringwood - -	Christchurch -	—	8 60						
			Woking Junction	Salisbury - -	32 40							
			Salisbury - -	Yeovil - -	39 20							
			Yeovil - -	Exeter - - -	50 20							
			Sidmouth Junction	Sidmouth - -	—	8 20						
			Cowley Junction	Yeoford Junction	9 0							
			Queen Street -	St. Davids - -	0 40							
			Yeoford Junction	Copplestone - -	2 40							
			Copplestone -	Umberleigh -	—	—	—	18 60				
			Umberleigh -	Barnstaple Pill Bridge.	5 60							
			Barnstaple Pill Bridge.	Torrington - -	—	14 60						
			Barnstaple Junction.	Pottington Crossing.	—	0 60						
			Pottington Crossing.	Ilfracombe - -	14 0							
			Yeoford - -	Lidford - -	24 20							
			Friary, Plymouth	Lidford - -	27 0							
			Woking - -	Godalming - -	10 0							
			Godalming - -	Havant - -	32 0							
			Pirbright Junction	Farnham Junction	7 40							
			Farnham - -	Guildford - -	10 0							
			Staines - -	Wokingham -	17 40							
			Wokingham -	Reading - -	7 0							
			Staines Curve	- - -	0 20							
			Farnham - -	Winchester Junction.	—	—	—	25 40				
			Waterloo - -	Windsor - -	25 0							
			Weybridge - -	Virginia Water -	5 60							
			Kensington -	Richmond - -	6 0							
			Gunnersbury -	Acton Junction -	0 41							
			Bollo Junction -	Acton Lane Junction.	0 28							
			Eastleigh - -	Gosport - -	16 0							
			Gosport - -	Stokes Bay -	1 67							
			Fareham - -	Portsmouth - -	10 20							
			Andover Junction	Redbridge - -	20 40							
			Broadstone Junction.	Poole - -	3 40							
			Poole - - -	Bournemouth -	3 60							
			Bishopstoke -	Salisbury - -	23 20							
			Alderbury Junction.	West Moors - -	—	—	—	22 0				
			Portsmouth - -	Portsmouth Harbour.	1 4							
			Fulwell - -	Shepperton - -	6 0							
			Lymington Junction.	Lymington Pier -	—	6 0						
			St. Deny's - -	Fareham - -	—	11 60						
			Seaton Junction -	Seaton - -	—	4 20						
			Exmouth Junction	Exmouth - -	—	9 0						
			Chard Junction -	Chard - -	—	3 0						
			Petersfield -	Midhurst - -	—	—	9 20					
			Ascot Junction -	Frimley - -	—	—	8 71					
			Frimley Junction	North Camp -	—	2 21						
			Botley - - -	Bishop's Waltham	—	—	3 70					

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch so worked.)

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Not on either of the foregoing Systems.							Distance of					
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph									
			On the Absolute Block System.							On the Permissive Block System.		
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
LONDON AND SOUTH-WESTERN—*continued.*			Frimley - -	Sturt Junction -	1 14						
			Meldon Junction	Holsworthy - -	—	17 54	—				
			Ryde, St. John's -	Pier Head - -	1 11						
			Whitton Junction	Hounslow Junction.	0 30						
			Raynes Park -	Leatherhead -	9 40						
			Hampton Court Junction.	Hampton Court -	1 40						
			Wimbledon -	Twickenham -	8 20						
			Wimbledon -	Streatham (including Loop).	5 60						
			Barnes - -	Feltham (via Loop).	8 60						
			Worgret Junction	Swanage - -	—	9 71					
			Halwill Junction	Delabole - -	—	33 60					
			Hampton Court Junction.	Guildford - -	16 44						
			Leatherhead -	Effingham Junction.	4 5						
			Farnboro' Junction	Frimley Junction	0 26						
			Brockenhurst -	Christchurch -	10 20						
			Bournemouth E.	Bournemouth West Junction.	2 45						
			Hamworthy Junction.	Hamworthy -	1 60						
			Fullerton - -	Hurstbourne -	7 20						
			East Putney -	Wimbledon -	2 60						
			Boscarne Junction	Wadebridge -	—	5 4					
					642 75	135 10	22 1	66 20			
LONDON, BRIGHTON, AND SOUTH COAST.	340 0	121 20	- - The whole line - -		340 0	121 20	—	—	- - -	- - -	—
LONDON, CHATHAM, AND DOVER.	180 12½	10 22½	London - -	Dover, Ramsgate, Sheerness, and Chatham Dockyard.	120 10½	10 5½	0 17*	—	- - -	- - -	—
			Peckham and Loughboro Loop.	Crystal Palace -	4 58						
			Nunhead - -	Greenwich -	2 24						
			Swanley Junction	Sevenoaks - -	9 11						
			Otford Junction -	Maidstone - -	15 20						
Dover and Deal Joint Line, *see* page 14.			Maidstone - -	Ashford - -	19 2						
			Fawkham Junction.	Gravesend - -	4 67						
			Shortlands - -	Nunhead - -	4 60						
					180 12½	10 5½	0 17				
LONDONDERRY -	4 40	—	Seaham - -	Ryhope Grange -	4 40	—	—	—	- - -	- - -	—
LONDON, TILBURY, AND SOUTHEND.	64 31	13 69	Gas Factory Junction.	Shoeburyness -	43 04	—	—	—	- - -	- - -	—
			Barking West Junction.	Forest Gate Junction.	1 43						
			North Woolwich Loop - -		0 23						
			Tilbury Loop - - -		0 26						
			Barking East Junction.	Pitsea - -	18 79						
			Ockenden Branch - -		—	—	—	6 5½			
			Romford Branch - -		—	—	—	3 28			
					64 15			10 2			
MACCLESFIELD COMMITTEE.	10 70	—	Marple Junction -	Macclesfield Junction.	10 70	—	—	—	- - -	- - -	—
MANCHESTER AND MILFORD.	—	41 0	Pencader - -	Aberystwith -	—	41 0	—	—	- - -	- - -	—

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - - Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	1 20	Faversham to Faversham Creek. * This section is at Dover, and trains are worked on it by telegraph signals and hand signals combined.
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	1 0	Single line.
Stanford-le-Hope Junction.	Thames Haven.	0 16	3 67	—	- - -	- - -	—	—	—	—	0 27	Whitechapel Goods Branch.
		0 16	3 67									
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE.	321 58½	3 12	Ardwick Joint Junction.	Stockport Junction	4 17	—	—	—	Stockport Junction.	Ashton Junction.	0 16½
			Fairfield Junction	Chorlton Junction	6 31						
			Gorton Junction	Hyde Road Junction.	0 45				Sheffield No. 5 Box.	No. 6 Box, Sheffield.	0 28
			Ashton Junction	Sheffield No. 5	36 10				Staveley South	Ireland Colliery Box.	0 57
			Woodhouse Junction.	Annesley	23 39						
			Staveley Town	Heath Junction	10 2				Huddersfield Junction.	Penistone West.	0 16
			Killamarsh Junction.	Waleswood Junction.	1 58						
			Sheffield No. 6	New Holland Pier Box.	66 68						
			New Holland Box.	Barton Junction	0 11						
			Barton Junction	Barrow Road Crossing.	0 10						
			Dinting, East	Dinting, South	0 14						
			Dinting, West	Glossop	1 3						
			Glazebrook Junction.	Wigan Central	11 74						
			Clarboro' Junction	Sykes Junction	8 22						
			Brocklesby	Wellowgate	9 56						
			Wellowgate	Garden Street, Grimsby.	0 13						
			Garden Street Junction.	Cleethorpes Up Home-signal.	3 9						
			Doncaster (Marsh Gate).	Wrawby Junction	33 17						
			Thorne Junction	Thorne, North-Eastern.	1 18						
			Barnsley Junction	Barnsley	6 46						
			Houghton Main Branch		3 6						
			Pindar Oaks	Doncaster	15 15						
			Woodburne Junction.	Mexbro' No. 2	10 26						
			Mexbro' Curve		0 14						
			Tinsley Junction	Aldam Junction	11 53						
			Aldam Curve		0 56						
			Wath Curve		0 68						
			Darnall Curve		0 49						
			Retford Curve		0 43						
			Swinton Branch		0 38						
			Old Oaks Junction, Barnsley.	Nostell, North	9 11						
			Wintersett Junction.	Nostell, South	0 33						
			Huddersfied Junction.	Willey Bridge	1 0						
			Tinsley, East	Tinsley, West	0 23						
			Oakwell Junction	Stairfoot Junction	1 7						
			Wrawby Junction	Lincoln Goods	28 71						
			Chester, East	Hawarden, South	6 64						
			Guide Bridge	Stalybridge, Victoria Junction.	1 76						
					318 16						1 37½
MANCHESTER, SOUTH JUNCTION, AND ALTRINCHAM.	9 20	—	London Road	Bowdon	8 70	—	—	—			—
			Castlefield Junction.	Ordsall Lane	0 30						
					9 20						
MARYPORT AND CARLISLE.	27 73	13 15	Maryport	Carlisle Station	27 73	—	—	—			—
			Bulgill	Brigham	—	—	—	6 13			
			Aspatria	Mealsgate	—	—	—	4 0			
					27 73	—	—	10 13			

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - - WORKED BY TELEGRAPH.

Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	REMARKS.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
Cleethorpes Junction.	End of Dock Line.	0 32	—	—	Barton Junction -	Barton - -	—	—	—	3 12	56 18	
Cleethorpes Up Home signal.	End of Terminal platform.	0 13										
Cleethorpes Up Home signal.	End of Bay sidings.	0 26										
New Holland Pier Box Up Home signal.	End of Bay sidings.	0 13½										
Barton Junction Box.	Commencement of Barton Branch single line working.	0 20										
Wigan Station Box Down Home signal.	End of Bay sidings.	0 15										
Victoria Junction Box, Stalybridge.	L. & N.W. and M.S. & L. Station Box.	0 15										
Midland Station Box, Lincoln (M.S. & L. Boundary)	M.S. & L. Box.	0 10										
L. & Y. Box (M.S. & L. Boundary)	Jumble Lane Box, Barnsley.	0 8										
London Road, Manchester (L. & N.W. Boundary)	End of M. S. & L. Bay sidings.	0 12½										
		2 4½					—	—	—	3 12	56 18	
- - - - - -		—	—	—	- - -	- - -	—	—	—	—	0 54	
- - - - - -		—	—	—	Mealsgate - -	Aikbank Junction	3 2*	—	—	—	—	* Carrying a staff.
											1 5	
							3 2				1 5	

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			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition,	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
MAWDDWY - -	m. ch. —	m. ch. 6 60	- - -	- - -	m. ch. —	m. ch. —	m. ch. —	m. ch. —	- - -	- - -	- - -	m. ch. —
MERSEY -	4 8	—	Liverpool (Central Low Level).	Commencement of Joint Lines near Green Lane.	2 77	—	—	—	- - -	- - -	- - -	—
			Hamilton Square	Birkenhead Park	1 11							
Joint line -	0 16	—	Park Station, S. -	Park Station, N. -	0 16							
	4 24				4 24							
METHLEY JOINT. (*See* Great Northern Railway.)												
METROPOLITAN -	47 46	16 34	Aldgate - -	High Street, Kensington.	7 10	—	—	—	- - -	- - -	- - -	—
			Baker Street -	Aylesbury - -	38 10							
			Chalfont Road Junction.	Chesham - -	—	—	—	4 1				
			Moorgate Street -	Midland Junction, King's Cross.	2 26							
	47 46	16 34			47 46	—	—	4 1				
METROPOLITAN DISTRICT	0 11½	--	Whitechapel Station (D.R.)	Line A.B. (*See* D.R. Act, 1884).	0 11½	—	—	—	- - -	- - -	- - -	---
METROPOLITAN AND DISTRICT JOINT.	2 3	—	Line A.B. - -	St. Mary's Junction.	0 4½							
			St. Mary's Junction.	Whitechapel Junction (London Hospital Line).	0 22½							
			St. Mary's Junction.	Aldgate East Junction.	0 38½							
			Aldgate East Junction.	End of Joint Property (N. Curve).	0 1½							
			Aldgate East Junction.	Minories Junction	0 8½							
			Minories Junction	End of Joint Property (Aldgate Station).	0 3½							
			Minories Junction	End of Joint Property (East of Mansion House).	1 3½							
METROPOLITAN DISTRICT.	4 3½	—	End of M. & D. R.'s Eastern Joint, Mansion House.	Commencement of M. & D. R.'s Western Joint, 6·315 ch. West of South Kensington Junction.	4 3½							
METROPOLITAN AND DISTRICT JOINT.	1 11½	--	Commencement of M. & D. R.'s Western Joint, South Kensington.	End of M. & D. R.'s Western Joint, 77 links North of High Street Station Platform.	1 11½							
METROPOLITAN DISTRICT.	12 43½	1 43½	High Street Junction.	Knaresborough Road Junction.	0 43							
			Commencement of D. R., Gloucester Road.	Putney - -	2 40½							
			B. Box Junction -	A. Box Junction -	0 12							
			Warwick Road Junction.	Studland Street Junction.	1 60½							
			Hammersmith Junction.	Earl's Court Junction.	0 23							
			Turnham Green Junction.	Ealing - -	2 74½							
			Ealing Loop Junction with G.W.R. -		0 8½							
			Mill Hill Park -	Lampton Junction.	4 15½							
			Lampton Junction.	Hounslow Barracks.	—		1 43½					
	19 72½	1 43½			19 72½		1 43½					

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Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- - -	- - -	—	—	—	Dinas Mawddwy -	Cemmes Road -	6 60	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	Aylesbury - -	Verney Junction -	12 33	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	

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			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
MIDLAND - -	981 46	195 74	Carlisle - - via Sheffield.	St. Pancras - -	—	—	—	—			—
			With the following exceptions :—		m. ch.						
			At Normanton - -		0 24						
			„ Sheffield - - -		0 29						
			„ Trent - - -		0 16						
			„ Leicester - - -		0 29						
			Total - -		1 18						
					307 77						
			Appleby North Curve -		0 31						
			Hawes Branch - -		—	5 69					
			Morecambe - -	Settle Junction -	28 59						
			Ingleton - -	Clapham - -	4 18						
			Skipton - -	Ilkley - -	11 62						
			Colne - -	Skipton North Junction.	10 55						
			Bradford - -	Leeds and Bingley Jns., Shipley.	2 73						
			Whitehall Jn. -	Leeds Junction -	0 21						
			Leeds Junction -	Engine Shed Jn. -	0 31				*List of Midland Branch Lines worked with single engines, i.e., the line is worked by train staff without tickets, and no engine is allowed to be upon the line unless the driver is in possession of the train staff.*		
			Keighley Station Junction.	Single Line Junction.	0 63						
			Guiseley Junction, Shipley.	Esholt Junction, Guiseley.	3 39						
			Apperley Junction	Burley Junction -	5 69						
			Menston Junction	Milner Wood Jn.	0 65						
			Masboro' - -	Tapton Junction -	15 8				West Bridge Branch - -		5 69
			Clay Cross North Junction.	Derby Junction, Derby.	19 79				Hampton Branch - -		6 47
			Cudworth South Junction.	Barnsley Station, Box.	3 42				Stroud Branch - - -		1 23
			Barnsley Goods Yard.	Court House Junction.	0 15				Dudbridge to Nailsworth -		3 8
			Cudworth North	West Junction -	0 35				Dursley Branch - -		2 44
			Staveley Junction	Seymour Junction	—	—	—	2 47	Thornbury Branch -		7 23
			Seymour Junction	Pleasley West -	—	—	—	7 60	Hemel Hempstead Branch -		8 33
			„	Creswell Junction	—	—	—	5 55			
			Holmes Junction	Masboro' South Junction.	0 23				Single Line Junction, Keighley to Oxenhope.		4 11
			Rotherham Branch - -		0 71				Castle Branch (Lancaster) -		0 45
			Derby Junction -	Trent Jn. viâ Chaddesden Sidings.	9 10				Barnoldswick Branch - -		1 67
			London Road Junction.	Spondon Junction	1 75						
			Derby South Junction.	Derby North Junction.	0 23						
			Sawley Junction -	Trent Station North Junction.	1 2				*On the following sections of line, Block Telegraph working is established, but, in order to admit of trains being connected or separated, more than one train is allowed in the section at one time.*		
			Sheet Stores Junction.	Trent Station South Junction.	0 29						
			Chorlton-cum-Hardy Junction.	Heaton Mersey Junction.	4 18						
			Ancoats Junction	Junction with L. and Y. Rly.	0 45						
			New Mills Junction.	Ambergate North Junction.	35 5				Appleby North Junction to Appleby Station Signal Box on up line.		0 22
			Ambergate North Junction.	Ambergate Station Junction.	0 21				Between Hellifield North and South Junctions, up and down lines.		0 17
			Ambergate West Junction.	Ambergate South Junction.	0 32				Skipton Station North Junction and South Signal Box, up and down lines.		0 20
			Buxton Junction	Peak Forest Jn. -	0 30				Shipley, Bradford Junction to Bingley Junction, down line.		0 14
			Buxton - -	Millers Dale Jn. -	4 11				Cudworth North and South Boxes, up and down lines.		0 21
			Little Eaton Jn. -	Butterley Junction	0 29	—	—	8 3	Belle Vue North to Belle Vue South, up line.		0 19
			Ripley Junction -	Heanor Station -	—	—	—	2 59	Between Burton North and South Passenger Station Boxes, up and down lines		0 27
			Wirksworth Branch - - -		—	—	—	8 39	Mansfield Passenger Station -		0 12
			Trent Station North Junction.	Nottingham Pasgr. Station West.	6 46				Dudbridge Junction to Dudbridge Sidings on the up loop line.		0 20 nearly
			London Road Jn., Nottingham.	Lincoln - -	32 69				Lancaster, between North and South Signal Boxes.		0 11
			Mansfield Junction, Nottingham.	Shireoaks East Junction.	30 7				Clapham Passenger Station, up line.		0 14
			Woodend Junction	Shireoaks West Junction.	0 45						
			Sutton in Ashfield Branch -		0 60						
			Kirkby Station Junction.	Pye Bridge Junction.	4 62						
			Radford Junction	Trowell Junction	4 77						
			Mansfield North Junction.	Rolleston Junction.	0 74	13 56					
			North Erewash Junction.	Long Eaton Junction.	0 27						
			Ilkeston South Jn.	Ilkeston, West Jn.	—	—	0 17				
			Ilkeston West Jn.	Ilkeston Town Jn.	—	0 37					

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		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	Midland. *Goods Lines.*
Lancaster	Lancaster Castle.	—	0 45		Single Line Junction, Keighley.	Oxenhope - -	—	—	—	4 11	0 28	Petterill Goods Station Branch.
Whitacre	Coleshill -	—	1 77		Coleshill - -	Hampton - -	—	—	—	4 50	0 45	Morecambe Pier to Station.
Between Signal Posts at—					Desford Junction	West Bridge -	—	—	—	5 69	0 47	Hunslet Goods Station Branch.
Leeds - - -		0 24			Hemel Hempstead	Branch - - -	—	—	—	8 33	5 2	Snydale Branches.
Normanton - -		0 24			Stroud Branch - -		—	—	—	1 23	0 12	Rylands Main Line Colliery Branch.
Barns'ey - -		0 15			Coaley Junction	Dursley -	—	—	—	2 44	4 55	Chapeltown Branch.
Sheffield - -		0 29			Dudbridge Junction.	Nailsworth - -	—	—	—	3 8	0 19	Branch to Smithywood Colliery.
Derby - -		0 33			Yate Single Line Junction.	Thornbury - -	—	—	—	7 23	0 17	Branch to Thorncliffe Colliery.
Trent - - -		0 16									0 75	Beighton Curve.
Leicester - -		0 29									1 27	Killamarsh to Norwood Colliery.
Nottingham -		0 24									2 4	Killamarsh Branch Junction to Kiveton Park Junction.
Gloucester - -		0 13									0 78	Staveley Junction to Hall Lane Junction.
Peterboro' -		0 10									0 25	Speedwell Branch.
Northampton -		0 8									0 44	Seymour Branch.
											1 5	Springwell Branch.
											1 78	Dunston and Barlow South to Cobnar Wood Junction.
											1 16	Cobnar Wood Junction to end of Monkwood Colliery Branch.
											1 36	Cobnar Wood Junction to end of Nesfield Colliery Branch.
											0 20	Dunston and Barlow North to Junction with Sheepbridge Branch.
											0 33	Branch to Chesterfield Canal.
											1 27	Sheffield, Wicker Goods Station Branch.
											0 57	Sheffield Branch to M. S. & L. Railway.
											0 12	Jessop's Branch, Brightside.
											0 45	Nunnery Colliery.
											1 21	Brampton Branch.
											4 4	Portion in use, Avenue Sidings to Pilsley Branch Junction.
											0 13	Lings Colliery Branch, North Curve.
											0 12	Lings Colliery Branch, South Curve.
											0 72	Holmwood Colliery Branch.
											0 20	Leeds and Liverpool Canal Co.'s Siding, Embsay.
											0 23	Guiseley, Ing's Mill Branch.
											0 22	Leeds Forge Company's Branch, Armley.
											0 14	Monk Bridge Ironworks Branch, Leeds.
											0 30	Hunslet Wagon Works Branch.
											0 45	Swinton Ironworks Branch, Kilnhurst.
											0 54	Williamthorpe Branch (Junction with Pilsey extension to top of old incline).
											0 18	Clay Cross South Junction towards No. 4 Pit (part of Williamthorpe Branch).
											0 16	Oaks Colliery Jn. to Quarry Jn., M.S.&L.Ry.
											0 13	Greasborough Branch (Park Gate Junction to end of Branch).
											0 12	West Kiveton Colliery Branch (Killamarsh).
											0 44	Glapwell Colliery Branch.
											0 2	Nunnery Colliery Branch to M.S. & L. Railway.
											0 14	Sheffield to Pond Street Depôt.
											0 23	Sheffield, Queen's Road Wharf.
											2 4	Dronfield to Unston Sidings.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under WORKED BY TELEGRAPH - - - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.	
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			Yards.	
MIDLAND—*continued*-			Ilkeston North Junction.	Ilkeston West Junction.	0 41				*Sections of Line on which the Midland Railway Company are exempted from establishing the Absolute Block Telegraph System.*			
			Bennerley Jn. -	Basford Junction	5 42							
			Crich Junction -	Codnor Park Jn. -	5 61							
			Ironville Junction	Riddings Junction	0 27							
			Tibshelf South Junction.	Pleasley Junction	3 39	—	—	5 35	Morecambe, from Signal Box to end of Excursion Platform.		550	
			London Road Junction, Derby.	Bristol - -	126 52				Bradford Station Signal Box to Buffer Stops.		520	
			Saltley Junction	Derby Junction -	1 1				Ilkley Signal Box to Buffer Stops.		363	
			Melbourne Jn. -	Sheet Stores Jn. -	11 36				Leeds, between Midland Wortley Junction and North Eastern Wortley Junction.		100	
			Stenson Junction	Chellaston West Junction.	4 23				Leeds, between Midland Leeds Junction and Joint Station Canal Junction.		195	
			Chellaston East Junction.	Melbourne -	1 56				Pontefract, Bay lines - -		150	
			Melbourne - -	Ashby - -	—	—	—	9 12	Rotherham Signal Box to Buffer Stops.		255	
			Whitacre - -	Nuneaton - -	11 32				Ilkeston Town Signal Box to Buffer Stops.		467	
			Water Orton Junction.	North Walsall Junction.	12 43				Lincoln, between Station Signal Box and High Street Crossing.		280	
			Litchfield Road Junction.	Ryecroft Junction	0 52				Hayfield Signal Box to Buffer Stops.		326	
			Park Lane Junction.	Castle Bromwich Junction.	0 67				Buxton Signal Box to Buffer Stops.		300	
			Walsall Wood Branch. - -		3 77				Wirksworth Signal box to end of Platform.		274	
			Ryecroft Junction	Crane Street Jn. -	6 35				Birmingham, between Garrison Lane Junction, Midland, and Gloucester Junction, London and North-Western Railway.		155	
			Heath Town Junction.	Wolverhampton, G. W. Rly.	0 37				Broom Junction Platform Line.		100	
			New Street Jn. -	King's Norton Jn.	5 16				Ashchurch, between Ashchurch Junction and Tewkesbury Junction.		380	
			St. Andrew's Jn.	Garrison Lane Jn.	0 27				Ashchurch, between Ashchurch Junction and Evesham Junction.		355	
			Lifford Station Jn.	Lifford West Jn. -	0 25				Ashchurch, between Evesham Junction and Tewkesbury Junction.		434	
			Barnt Green Jn. -	Ashchurch Jn. -	12 3	—	—	20 77	Worcester, between Shrub Hill Junction and South Signal Box.		440	
			Ashchurch Jn. -	Malvern Wells Jn.	13 29				Bristol, St. Philips' Good Station to Buffer Stops.		291	
			Tewkesbury Jn. -	Evesham Junction	0 20				Bath Station Signal Box to Buffer Stops.		573	
			Barton and Brecon Curve Junction.	Three Cocks Junction.	0 60	—	—	24 71	Brynamman Signal Box to Buffer Stops.		60	
			Swansea - -	Brynamman (viâ Morriston).	2 1	5 46	—	11 15	Rugby, between Midland Box and Midland Junction (L. & N.W. Rly.).		280	
			Lawrence Hill Junction.	St. Philip's Bristol.	—	—	0 42		Peterborough, between (Midland) Wisbech Junction and Westwood Junction (G. N. Rly.).		173	
			Stonehouse - -	Dudbridge Jn. -	0 29	2 20			Northampton, from Signal Box to Buffer Stops.		200	
			Yate Main Line Junction.	Yate Single Line Junction.	0 14				Northampton, between Northampton Junction, Midland, and Hardingstone Junction, L. & N.W. Rly.		176	
			Mangotsfield North Junction.	Bath - -	10 14				Bedford, Hitchin Branch Junction to Buffer Stops.		170	
			Mangotsfield South Junction.	Mangotsfield Stn. Junction.	0 32				Gospel Oak Signal Box to Buffer Stops.		320	
			Kingswood Jn. -	Ashley Hill Jn. -	1 50				St. Pancras, St. Pancras Junction to Buffer Stops.		433	
			Wagon Works Jn.	Easton Road -	0 18							
			Berkeley Road Junction.	Junction of Sharpness Joint Stn. property.	4 4							
			Wigston North Junction.	Rugby - -	16 79							
			London Road Jn., Nottingham.	Melton Junction	17 35							
			Saxby Station -	Little Bytham Jn.	—	—	—	13 9				
			Glendon South Junction.	Manton Junction	15 57							
			Syston South and North Junctions.	Fletton Road Jn., G. E. Rly.	48 14							
			None Junction -	Junc. with Great Northern Rly.	0 10							
			Knighton North -	Leicester Jn. -	29 30							
			Knighton South Curve - - -		0 30							
			Woodville Junction.	Swadlincote Jn. (viâ Woodville).	—	7 12						
			Wigston South Junction.	Blaby Junction	0 50							
			Wigston Central Junction Curve -		0 10							
			Branch - -	L. & N. W. Rly., Wellingboro'.	0 60							
			Bedford Junction	Hitchin - -	16 1							
			Addition - -	Kettering and Huntingdon Rly.	—	0 30						
			Oakley Junction -	Northampton Passenger Stn.	20 1							
			Dudding Hill Jn.	Acton Wells Jn. -	2 74							
			Child's Hill Jn. -	Dudding Hill Jn.	0 67							
			Carlton Road Jn.	Junction Rd. Jn.	0 60							
			Kentish Town Jn.	Highgate Rd. Jn.	0 46							
			St. Paul's Road Junction.	King's Cross -	1 1							
	981 46	195 74			978 61	35 30	0 59	120				

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph.

Not on either of the foregoing Systems.

From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.
m. ch.		m. ch.	m. ch.	m. ch.
20 66	Dore and Chinley Line.			
0 15	Branch to Chesterfield Gas Co.'s Works.			
0 78	Shirland Branch.			
0 23	Branch to Mersey Dock Line.			
0 11	Liverpool Grain Warehousing Co.'s Branch.			
2 36	Bootle Branch.			
0 23	Sandon Dock Branch.			
1 9	Ancoats Goods Station Branch.			
0 36	Linacre Gas Company's Branch.			
0 21	Curve at Buxton.			
0 28	Rowsley Goods Station Branch.			
0 29	Ripley Goods Station Branch.			
0 69	Heanor Station to Heanor Goods Junction.			
0 40	St. Mary's Goods Wharf.			
0 20	Wirksworth Station to end of Branch.			
0 37	Wirksworth Station to bottom of 1 in 5 incline.			
0 25	Branch to Bonded Stores, St. Mary's.			
0 31	Derby Cattle Docks Branch.			
0 47	Ashton Road Depôt Branch.			
0 23	Mansfield Goods Station Branch.			
3 68	Nutbrook Branch.			
2 34	Mapperley Branch.			
0 35	Blackwell South Curve.			
2 36	Blackwell Branch.			
2 42	Pilsley Branch.			
0 56	Nottingham Goods Station Branch.			
0 36	Nottingham Engine Shed Branch.			
0 20	Parnham's Mill Siding.			
0 66	Cinder Hill Colliery Branch.			
0 60	Bestwood Colliery Branch.			
0 40	King's Mill Branch.			
0 39	Langton Colliery Branch.			
0 77	Stanton Colliery Branch.			
0 30	Babbington Branch.			
0 78	Heanor Goods Branch.			
0 37	Beggarlee Branch.			
0 18	New Brinsley Branch.			
0 73	Digby Colliery Branch.			
1 55	Watnall Colliery Branch.			
0 28	Between Lenton North and South Junctions.			
1 1	Buckland Hollow Branch.			
0 79	Swanwick Colliery Branch.			
0 55	Alfreton Colliery Branch.			
1 58	Skegby Colliery Branch.			
0 47	New Hucknall Colliery Branch.			
0 5	Seeley's Colliery Branch.			

Single Lines of Railway (not included in the foregoing Columns),
(1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or
(2.) Worked under the Train Porter System; or
(3.) Worked under the Train Staff System.

From	To	Distance of: System as above. (1.)	Train Porter System (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.
m. ch.		m. ch.	m. ch.	m. ch.	m. ch.
0 9	Diminsdale Branch.				
0 19	Butcherwood Colliery Branch.				
0 44	Moreton Colliery Branch.				
1 0	Lawley Street Goods Station Branch.				
4 78	Kingsbury Branch.				
0 34	Branch to New Birch Coppice Colliery.				
0 35	Nuneaton Abbey Junction to Junction with L. & N.W. Railway.				
3 0	Stockingford Branch.				
0 30	Annesley Colliery Branch.				
1 24	Cannock Chase Colliery Branch.				
0 34	Walsall Goods Station Branch.				
0 28	Wolverhampton Goods Station Branch.				
0 77	Lifford Canal Branch.				
0 27	Derby Junction to Garrison Lane Junction.				
0 22	Bordesley Branch.				
0 24	Camp Hill Goods Station Branch.				
0 14	Junction with Great Western Railway, Evesham.				
0 14	Worcester Goods Station Branch.				
0 61	Tewkesbury Goods Station Branch.				
0 43	Branch to Lower Yard, Bristol.				
0 66	Barton Street Junction, High Orchard.				
0 23	Branch to New Dock, High Orchard.				
0 30	Sharpness Docks Branch.				
0 78	Litchurch Wagon Works Branch.				
0 19	London Road Goods Wharf.				
0 14	Cloud Hill Lime Works Branch.				
0 8	Ashby Gas Works Branch.				
1 41	Guild Street Branch.				
1 4	Hay Branch.				
0 20	Allsopp's Brewery Branch.				
0 11	Two Curves in Hay.				
0 18	Mosley Street Branch.				
0 44	Horninglow Branch.				
0 47	Shobnall (Leicester Junction to Canal).				
0 65	Bond End Branch (Junctionwith Shobnall Branch to end of same).				
0 33	Robinson's Brewery Branch.				
0 28	Uxbridge Street Junction to Eadie's Sidings.				
0 22	Leicester Junction Sidings to Dale Street Junction.				
0 20	Goods Yard Branch, Burton.				
0 14	Coal Wharf Branch, Burton.				
0 12	Mann and Crossman's Brewery Branch.				
0 4	Branch to Charrington's Brewery.				
0 6	Branch to Charrington's Maltings.				
0 4	Branch to Meakin's Maltings.				
0 3	Branch to Bass & Co.'s Shobnall Maltings.				
0 14	Tamworth connecting line with L. & N.W. Railway.				
0 21	Glascote North Curve.				
0 14	Glascote South Curve.				
0 9	Glascote Branch towards Annington Colliery.				
0 7	Walsall Wood Colliery Branch.				
0 11	Canal Wharf Branch, Wolverhampton.				
0 28	Canal Wharf Branch, Saltley.				
0 10	Canal Wharf Branch, Lifford.				
0 76	Worcester Wharf Branch.				
0 26	Branch to Cadbury's Works, Stirchley Street.				
0 8	Branch to Midland Goods Depôt, Swansea.				
0 11	Branch towards Prince of Wales' Dock, Swansea.				
0 25	Swansea Harbour Branch.				
0 26	Gurnos Canal Wharf Branch.				
0 6	Gilwyn Branch.				
1 4	Yniscedwyn Branch.				
0 42	Yniscedwyn Iron Works Branch.				
0 22	Ystalyfera Iron Works Branch.				
0 26	Moorfields Junction to Junction with G.W. Railway.				
0 33	Wernplunis Branch.				
0 9	Hendreladis Branch.				
0 77	Caellian Branch.				
0 7	Sixpit Junction to Junction with G.W. and Mid. Joint.				
0 30	Tramway Junction to Barton Street Junction.				
1 2	Coal Pit Heath Branch.				
0 22	Bath Riverside Branch.				
0 21	Canal Wharf Branch, Rugby.				
6 66	Holwell Branch Junction to Wycombe Junction.				
2 19	Ashwell Branch.				
0 74	Woodville Goods Station Branch.				
0 11	Swadlincote Goods Station Branch.				
2 39	Netherseal Colliery Branch.				
2 53	Bretby Colliery Branch.				
0 60	Branston Curve.				
0 27	Soar Lane Branch.				
0 38	Junction with Line to Passenger Station to end of West Bridon Branch.				
1 18	Snibstone to Swannington.				
3 58	Wymington Deviation.				
0 26	Hitchin Goods Station Branch.				
1 74	Cransley Branch.				
0 38	Northampton Goods Station Branch.				
0 23	North London Incline.				
0 25	Canal Docks Branch.				
0 32	St. Pancras Goods Station Branch.				
0 10	Melton Mowbray Highway District Board Branch.				

Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*

m. ch.	
0 27	Lloyd's Branch, Weldon and Corby.
2 2	Lodington Branch.
3 42	Higham Ferrers Branch.
1 3	Brent South Junction to Dudding Hill Junction.
0 18	Bagworth Colliery Branch.
0 19	Rawdon Colliery Branch.
0 16	Mill Road Goods Branch, Cambridge.
0 26	Heath Park Depôt Branch, Hemel Hempstead.
0 18	Finchley Road Junction with Metropolitan Railway.
0 27	Somers Town Branch.
0 22	Acton Canal Wharf Branch.
0 40	West Kensington High Street Coal Drops Branch.
0 25	Kensington High Street Coal Drops Branch.
0 14	Whitecross Street Branch.
0 9	Walworth Coal Drops Branch.
0 8	Brixton Branch.
0 24	Wandsworth Branch.
0 66	Bow Branches.
0 16	West India Docks Branch.
0 19	Poplar Docks Branch.
0 30	Thames Wharf Branch.
0 10	Branch to Victoria Docks.
0 12	Maidstone Goods Branch.
4 28	Upper Bank Junction to Gla Junction, viâ Llansamlet.
176 18	

Unused Lines.

m. ch.	
1 5	Avenue Sidings to Pilsley Branch Junction.
0 32	Appleby South Curve.
0 30	Wirksworth, bottom of 1 in 5 incline to junction with High Peak Railway.
0 24	Blackwell Branch.
0 50	Mansfield South Junction to Mansfield East Junction.
0 73	Babbington Branch.
0 36	Eastwood Branch.
0 18	South Normanton Colliery Branch.
1 24	Morton Colliery Branch.
0 5	Stockingford Colliery Branch (not laid).
0 43	Sharpness Docks Branch (not laid).
0 60	Tamworth Curve (not laid).
0 4	Yniscedwyn Branch (not laid).
0 49	Caellian „ „
1 7	Frampton Cotterill Branch (not laid).
0 30	Netherseal Colliery Branch (not laid).
0 64	Hemel Hempstead Branch (not laid).
1 21	Park Street Branch (not laid).
11 15	
176 18	Goods lines.
11 15	Unused lines.

m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
2 65	2 42		—	—	—	37 21	176 18	Goods Lines.
							11 15	Unused Lines.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous enter separately one under the other, under Worked by Telegraph - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
MIDLAND—*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Lines worked:—								
	4 53	33 56	Kettering -	Huntingdon -	—	25 71					
			Gospel Oak - -	Tottenham North Junction.	4 53						
			Halesowen Branch - - - -		—	5 78					
					4 53	31 69					
			Joint Lines.								
	36 49	40 68	Hawes Joint Station - - -		0 27						
			Carnforth South Curve - - -		0 20						
			Wennington -	Carnforth - -	9 48						
			Swinton - -	Moorthorpe -	*—						
			Moorthorpe Junction.	Junction with G.N.R.							
			Woodley Junction	New Mills Junction.	6 36						
			New Mills Junction.	Hayfield - -	0 46	2 16					
			Romiley Junction	Redditch Junction	2 54						
			Romiley Junction	Bredbury Junction	1 24						
			Sharpness Joint Station - -		0 15						
			Ashley Hill Junction.	Sneyd Park Junction.	3 24						
			Sneyd Park - -	Avonmouth -	—	2 73		1 10			
			Wisbech Junction, Peterboro'.	Junctn. with G.E. Railway, Lynn.	3 25	32 73					
			Weddington Junction.	Junction with L. & N.W. Rly.	0 61						
Total -	28 60	40 68			28 60	38 2		1 10			
Summary.											
Total, Midland - -	981 46	195 74	- - - -		978 61	35 30	0 59	120 2			
„ Lines worked -	4 53	33 56	- - - - -		4 53	31 69					
„ Joint Lines -	28 60	40 68	- - - - -		28 60	38 2		1 10			
Aggregate -	1,014 79	270 38			1,012 14	105 21	0 59	121 12			
MIDLAND AND GREAT NORTHEN JOINT LINES. *See* GREAT NORTHERN.	—	—	Bourn - -	Sutton Bridge.							
			Bourn - -	Bytham.							
MIDLAND AND GREAT NORTHERN (EASTERN SECTION).	6 44	102 69	Lynn, South -	Grimston Road -	6 44	—	—	—			—
			Melton Constable	Aylsham - -	—	11 19					
			Great Ormesby -	Yarmouth - -	—	5 40					
			Aylsham - -	Great Ormesby -	—	—	—	24 40			
			Grimston Road -	Norwich - -	—	—	—	46 35			
			Melton Constable	Cromer - -	—	—	—	15 15			
					6 44	16 59	—	86 10			
MIDLAND AND NORTH-EASTERN: JOINT LINES.	25 52	—	Swinton - -	Knottingley -	19 35						
			Otley - - -	Ilkley - -	6 17						
					25 52						
MIDLAND AND SOUTH-WESTERN JUNCTION.	1 29	54 61	Andoversford -	Dowdeswell -	0 49						
			Dowdeswell -	Cirencester - -	—	—	—	13 12			
			Cirencester - -	Swindon Town -	—	14 74					
			Swindon Town -	Marlborough Station.	—	—	—	11 23			
			Marlborough Station.	Marlborough Jn. with G.W.R.	0 27						
			Grafton - -	Andover Junction Station.	—	—	—	14 7			
			Swindon Junction with G.W.R.	Rushey Platt Junction.	0 33						
			Wolfhall Junction	Grafton - -	—	1 25					
					1 29	16 19	—	38 42			

* Included below, *see* Midland and North-Eastern.

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph.					Single Lines of Railway not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together and allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line.		From	To	Distance of					
			Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.			System as above. (1.)	Train Porter System (2.)	Train Staff System. (3.)			
									With Tickets.	Without Ticket.		
		m. ch.	m ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
					Barnoldswick Branch -		—	—	—	1 67	0 25	Nunnery Colliery Branch.
											1 23	Guiseley and Yeadon.
										1 67	1 48	
					Sneyd Park Junction.	Hotwells -	—	—	—	1 56	0 29	Branch to Avonmouth Docks.
											0 70	Wisbech Dock Junction to Market Place.
											0 44	Newark Curve.
											2 18	Enderby Branch.
											0 23	Donisthorpe Colliery Branch.
											0 52	Dentonholm Goods Branch.
											0 24	Connecting line, Six Pit.
											0 15	Peckham Rye Coal Depôt.
											5 35	*Unused Lines.*
											3 12	Stoke Golding Junction to Hinckley Junction. (not laid).
											0 74	Wath Curve.
											4 6	
											5 35	Goods lines.
											4 6	Unused lines.
		—	—	—			—	—	—	1 56	—	
												Unused Lines.
		2 65	2 42	—			—	—	—	37 21	176 18	11 15
		—	—	—			—	—	—	1 67	1 48	—
		—	—	—			—	—	—	1 56	5 35	4 6
		2 65	2 42	—			—	—	—	40 64	183 21	15 21
- - - - - -		—	—	—	- - - - - -		—	—	—	—	1 15	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails. only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
NEATH AND BRECON :—	0 37	39 61	Ynisygeinon Junction.	*Mount St. Signal Box, Brecon.	—	—	—	28 70	- - -	- - -	—
Neath Branch - -	—	—	Junctn. with G.W. Ry., Neath.	Neath Signal Box	0 26						
			Neath Signal Box, Onllywn Station.	Onllwyn, Colbren Junction.	—	1 0	—	9 71			
					0 26	1 0	—	38 61			
NORTHAMPTON AND BANBURY.	—	15 6	Blisworth - -	Green's Norton -	—	5 14	—	—	- - -	- - -	—
NORTH AND SOUTH-WESTERN JUNCTION.	3 14	1 46	Old Oak Junction	Kew Bridge -	3 14	—	—	—	- - -	- - -	—
			Hammersmith Junction.	South Acton -	—	—	0 23				
			Hammersmith Station.	Hammersmith Junction.	—	1 23					
					3 14	1 23	0 23				
NORTH-EASTERN	971 62	415 79	Berwick - -	Newcastle Manors	65 79	—	—	—	- - -	- - -	—
			Tweedmouth Junction.	Sprouston Junction.	21 7						
			Park Lane Junction, Gateshead.	York - -	78 28						
			Coldstream Junction.	Alnwick Junction	0 44	34 74					
			Alnwick Junction	Alnwick - -	2 69	—	0 17				
			Amble Branch Junction.	Amble Station -	—	4 73					
			Scotswood, West Junction.	Bishop Auckland	20 72	13 43					
			Baxter Wood Junction.	Bridge House Junction.	0 52						
			Pelaw Junction -	South Shields, New Station.	7 11						
			Pelaw Junction -	Sunderland, New Station.	8 37						
			Sunderland New Station.	Penshaw Junction	5 75						
			Sunderland Junction.	Ryhope Grange Junction.	1 63						
			Forth Goods Junction.	Carlisle Junction	59 6						
			Haitwhistle Junction.	Alston - -	—	13 0					
			Heaton Junction	Tynemouth -	6 33						
			Byker Junction -	Percy Main -	6 43						
			Percy Main Junction.	Percy Main North Junction.	0 17						
			Percy Main North Junction.	Tyne Commissioners No. 1 Cabin.	0 52						
			Primrose Hill, Stockton.	Stranton Lane, W. Hartlepool.	11 14						
			Norton, East Junction.	Norton, West Junction.	0 28						
			Norton, South Junction.	Ferryhill - -	11 10						
			Billingham Junction.	Port Clarence Junction.	3 0						
			Cleadon Junction	Horton Junction	1 64						
			Murton Junction	Durham (Elnet) -	—	8 11					
			Gateshead Junction.	Ferryhill - -	22 71						
			Ferryhill - -	Hartlepool -	16 29						
			Clarence Junction, W. Hartlepool.	East Hartlepool Junction.	1 53						
			Cemetery Road West.	Cemetery Junc., N. Hartlepool.	0 35						
			Ryhope Grange Junction.	Castle Eden, North Junction.	12 3						
			Castle Eden, N. Junction.	Carlton, North Junction.	9 70						
			Carlton, North Junction.	Carlton, East Junction.	0 37						
			Byers Green Junction.	Burnhouse Junction.	4 32						
			Burnhouse Junction.	Bishop Auckland, East Junction.	—	3 51					
			Byers Green Junction.	Cornforth Lane -	1 14						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
			Distance of Single Line.				Distance of					
From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
- - -	- - -	m. ch. —	m. ch. —	m. ch. —	- - -	- - -	m. ch. —	m. ch. —	m. ch. —	m. ch. —	m. ch. 63	
*Mount St. Signal Box, Brecon.	Junction with Brecon and Merthyr Ry., Brecon.	0 11										*Worked by fixed signals only.
		0 11										
- - -	- - -	—	—	—	Green's Norton -	Cockley Brake Junction.	—	—	9 72	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
Tweedmouth, N. Cabin.	Tweedmouth, S. Cabin.	0 14	—	—	Hexham Junction	Catton Road -	12 16	—	—	—	177 13	†In the cabins of these sections recording instruments are placed by means of which signalmen are able to record the number of trains admitted into the section in the rear. ‡Leeds New Station is the joint property of L. & N.W. and N.E. companies.
†Newcastle Manors.	Newcastle Dean Street.	0 18			Cornforth Lane -	Coxhoe - -	0 65					
Newcastle, Dean Street.	Newcastle Central (No. 1).	0 10			Tebay Station -	Tebay Yard - -	0 26					
†Newcastle, Forth Goods Jn.	Shot Factory Lane Cabin.	0 28										
Shot Factory Lane Cabin.	High Level Cabin.	0 45										
†High Level Cabin.	Gateshead Jn.	0 17										
†Gateshead, High St. Cabin.	Gateshead, Hawks Cabin.	0 15										
Hawks Jn.	Park Lane.	0 18										
Port Clarence Jn.	Port Clarence Station.	0 24										
‡Leeds New Stn., East Cabin.	Leeds New Stn., Canal Cabin.	0 29										
Stockton Jn.	Primrose Hill.	0 15										
Hartlepool W. Stn. Cabin.	Church St. Jn.	0 7										
Hartlepool W. Stn. Cabin.	Clarence Rd. Jn.	0 15										
Guisboro' Station Cabin.	Guisboro' Station.	0 12										
Harrogate N. Cabin.	Harrogate S. Cabin.	0 14										
York Stn. Cabin.	York Loco. Cabin.	0 15										
Scarboro' Station Cabin.	Falsgrave Cabin.	0 29										
Bridlington, S. Cabin.	Bridlington Quay Cabin.	0 37										
Bishop's Auckland E. Cabin.	Bishop's Auckland N. Cabin.	0 18										
Barnard Castle E. Cabin.	Barnard Castle W. Cabin.	—	0 20									
Driffield Jn. Cabin.	Driffield Depôt Cabin.	0 21										
Darlington Platform Cabin.	Darlington N. Cabin.	0 18										
Eaglescliffe South Jn. Cab.	Eaglescliffe North Jn. Cabin.	0 20										

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAY, OR (Where the System is not continuous, enter separately one under the other, and									
			Worked by Telegraph - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES--*continued.*												
NORTH - EASTERN--*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Auckland Junction.	Durham, East Cabin.	3 64						
			Dearness Junction	Hedley Hill -	1 78	3 53					
			Dalton Junction -	Richmond -	9 74						
			York - -	Scarborough -	41 48						
			Malton, E. Cabin	Driffield, West Junction.	0 40	18 62					
			Sessay Wood Junction.	Sunbeck Junction	0 31						
			Bishop House Junction.	Sunbeck Junction	0 36						
			Sunbeck Junction	Scarboro' Road Junc., Malton. (Less Gilling and Hemsley Bnch.).	—	19 35					
			Rillington - -	Whitby - -	30 37						
			Mill Lane, Junc., Pickering.	Seamer Junction	0 75	15 6					
			Grosmont Junction.	Picton Junction -	11 68	17 63					
			Nunthorpe Junction.	Battersby Junction.	—	5 10					
			York - -	Altofts Junction -	23 12						
			Methley Junction	Whitwood Junction.	0 50						
			Burton Salmon Junction.	Knottingley Junction.	2 68						
			Chandlers Whin Cabin.	Shaftholme Junction.	26 34						
			Joan Croft Junction.	Applehurst Junction.	0 48						
			Thorne - -	Staddlethorpe Junction.	14 0						
			Potter's Grange Junction.	Goole, L. and Y. Junction.	0 60						
			Milford Junction Station.	Gascoigne Wood Junction.	1 29						
			Gascoigne Wood Junction.	Sherburn Junction.	1 16						
			Leeds New Station	Park Street, Hull	51 10						
			Cliffe Junction -	Market Weighton Junction.	16 4						
			Geldard Junction	Thirsk Junction -	37 73						
			Starbeck North Junction.	Bilton Road Junction.	1 4						
			Dragon Junction, Harrogate.	Poppleton Junction.	17 72						
			Starbeck South Junction.	Pannal Junction -	2 65						
			Melmerby Junction.	Northallerton -	—	11 33					
			Northallerton -	North Stockton -	17 43						
			Church Fenton Junction.	Micklefield Junction.	4 79						
			Cross Gates Junction.	Wetherby Junction.	0 44	10 23					
			Garforth Junction	Castleford Junction.	0 43	5 54					
			Castleford Station	Cutsyke Junction	0 64						
			Church Fenton Junction.	Crimple Junction	16 45						
			Gilling - -	Mill Lane Junc., Pickering.	0 22	16 46					
			Ripley Junction -	Pateley Bridge -	—	11 34					
			Melmerby - -	Masham - -	—	7 42					
			Arthington - -	Otley - - -	3 25						
			Arthington North Junction.	Arthington West Junction.	0 22						
			Knaresboro' Junction.	Pilmoor Junction	—	13 7					
			Bootham Junction	Beverley Junction	31 40						
			Cottingham Junction.	Hessle Road Junction.	—	1 53					
			Anlaby Road Junction.	Botanic Gardens Junction.	0 37						
			West Parade Junction, Hull.	Southcoates Junction.	2 59						
			Southcoates Junction.	Withernsea -	0 26	17 19					
			Wilmington Junction.	Hornsea - -	0 14	12 66					
			West Parade Junction.	Seamer Junction -	49 12						
			Driffield Junction	Driffield West Junction.	0 23						

OF OTHER RAILWAYS WORKED BY THEM.

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		Distance of Single Line.					Distance of					
From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
Ferryhill No. 1 Cabin.	Ferryhill No. 2.	0 23										
Kirkby-Stephen W. Cabin.	Kirkby-Stephen E. Cabin.	0 28										
Middlesboro' East Cabin.	Middlesboro' W. Cabin.	0 15										
Pickering, Bridge St. Cabin.	Pickering, High St. Cabin.	0 10										
Selby Stn. Cabin.	Selby West Jn. Cabin.	0 11										
Gateshead, High St. Cabin.	Gateshead Jn. Cabin.	0 13										

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
NORTH - EASTERN—*continued.*			Northallerton High Junction.	Castle Hills Inner Junction.	—	0 43					
			Castle Hills Junction.	Leyburn - -	1 54	15 43					
			Leyburn - -	Hawes - -	—	16 29					
			Clifton Station -	Clifton Junction -	0 35						
			Eamont Junction	Red Hills Junction.	1 7						
			Clifton Station -	Darlington North Road.	28 78	29 70					
			Kirkby Stephen -	Tebay - - -	3 44	8 0					
			Barnard Castle -	Bishop Auckland	4 13	10 65					
			Tees Valley Junction.	Middleton in Teesdale.	—	7 54					
			Wilton Junction -	Stanhope - -	0 31	12 34					
			Hownes Gill Junction.	West Durham Junction.	0	7 79					
			Hownes Gill Junction.	Consett South Junction.	—	0 25					
			West Durham Junction.	Saltburn - -	44 26						
			Bishop Auckland North Junction.	Bishop Auckland West Junction.	0 20						
			Albert Hill Junction.	Parkgate Junction, Darlington.	0 27						
			Polam Junction -	Oak Tree Junction	3 77						
			Hartburn Junction.	Bowesfield Junction.	0 42						
			Saltburn Junction.	Loftus - -	6 71	1 22					
			Guisboro' Junc., Middlesbro'.	Guisboro' Station Cabin.	9 30						
			Hutton Junction, Guisboro'.	Brotton - -	6 46						
			Priestcroft Junction.	Foggo Junction -	1 15						
			Newcastle, New Bridge E. Stn.	Backworth Junction.	6 29						
			Backworth Junction.	Morpeth - -	11 15	2 66					
			Bedlington Junction.	Newbiggin -	2 68	2 53					
			Newsham Junction.	Isabella Pit Junction.	0 34						
Line worked: Sprouston Junction and Kelso.	1 21		Isabella Pit Junction.	Blyth - -	0 78	0 21					
Scarborough and Whitby.	—	20 58	Backworth Junction.	Monkseaton Junction.	2 44						
Scarborough, Bridlington, and West Riding Junction Railway.	13 11		Monkseaton Junction.	Tynemouth -	2 54						
			Monkseaton Junction.	Hartley Junction, Avenue Branch.	—	3 52					
			Scotswood Junction.	West Wylam Junction.	6 38						
			Loftus - -	Bog Hall Junction.	0 7	16 21					
Joint Lines: Otley and Ilkley, and Swinton and Knottingley. *See* p. 56.			Prospect Hill Junc., Whitby.	Falsgrave Junc., Scarborough.	—	20 58					
			Sprouston Junction.	Kelso - -	1 21						
			Market Weighton East Junction.	Driffield West Junction.	13 11						
			Goldard Junction	Point of Junction between the N.E. & G.N's lines at Leeds.	0 18						
	986 14	436 57			979 35	422 73	0 17	—			
NORTH LONDON -	11 57	—	Broad Street -	Chalk Farm -	5 51	—	—	—	- - -	- - -	—
			Dalston Junction-	Poplar Central Junction.	4 58						
			Western Junction, Dalston.	Eastern Junction, Dalston.	0 33						
			Bow - -	Junction with Great Eastern Railway at Bow Bank.	0 32						
			Bow - -	Junction with Tilbury Railway at Bromley.	0 43						
					11 57						
NORTH STAFFORDSHIRE	152 33	22 35	Macclesfield Junction.	Stoke North Box	19 46	—	—	—	Macclesfield, L. & N.W.	Macclesfield Junction.	0 16
			Stoke South Box	Colwich, N.S. -	18 21				Crewe Sidings	Crewe Junction.	0 20
			Stone Junction -	Norton Bridge, N.S.	3 42						
			North Rode - -	Uttoxeter Junction.	27 52						

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From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
		6 59	0 20				13 27				177 13	
- - - - - -		—	—	—	- - -	-	—	—	—	—	—	
StokeNorth Box.	StokeSouth Box.	0 20	—	—	Cresswell - -	Totmonslow -	—	—	—	1 20	—	
Colwich Junction.	Colwich N. S. Box.	0 20			Sneyds Junction -	Tunstall Junction	—	—	—	—	1 8	
Norton Bridge Junction.	Norton Bridge N. S. Box.	0 10			Chatterley Junction.	Chesterton -	—	—	—	—	1 70	
					Stretton - -	Horninglow -	—	—	—	—	1 23	

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			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
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ENGLAND AND WALES—*continued.*											
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
NORTH STAFFORDSHIRE—*continued.*			Rocester - -	Ashbourne - -	—	6 66					
			Uttoxeter North Junction.	Uttoxeter West Junction.	0 26						
			Crewe Sidings -	Harecastle Junction.	8 4						
			Stoke Junction -	Willington Junction.	29 77						
			Marston Junction	Burton Junction -	3 27						
			Congleton Upper Junction.	Heaths Junction -	—	4 40					
			Heaths Junction -	Stoke Junction -	8 6						
			Cheddleton Junction.	Milton Junction -	—	—	—	6 60			
			Kidsgrove Junction.	Etruria Junction -	7 25						
			Alsager Junction	Keele Junction -	7 30						
			Newcastle Junction.	Hartshill -	0 59						
			Hartshill - -	Newcastle Station	—	—	—	0 45			
			Newcastle Station	Market Drayton Junction.	14 63						
			Lawton Junction	Lawton Crossing	0 51						
			Lawton Crossing	Hassall Green -	—	—	—	2 44			
			Hassall Green -	Wheelock - -	1 58						
					151 27	11 26		9 69			0 36
NORTH WALES NARROW GAUGE.	—	11 70	Dinas - -	Snowdon - -	—	9 35	—	—	- - -	- - -	—
OLDHAM, ASHTON, AND GUIDE BRIDGE JUNCTION.	5 61	—	Guide Bridge	Oldham - -	4 76	—	—	—	Sheepwashers' Lane, Clegg Street, and Waterloo.		0 19
			Canal Junction -	Audenshaw Junction.	0 29	—	—	—	Waterloo Box and O, A, and G. B. Boundary.		0 17
					5 25						0 36
PEMBROKE AND TENBY.	—	27 24	Pembroke Dock -	Whitland -	—	—	—	27 24	- - -	- - -	—
PONTYPRIDD, CAERPHILLY, AND NEWPORT.	5 11	—	Pontypridd Junction.	Penrhos - -	5 11	—	—	—	- - -	- - -	—
RAVENGLASS AND ESKDALE.	—	7 11	- - -	- - -	—	—	—	—	- - -	- - -	—
RHONDDA AND SWANSEA BAY.	2 45	12 26	Port Talbot - -	Treherbert -	2 45	1 65	—	10 41	- - -	- - -	—
RHYMNEY - -	26 34	5 58	Old Cardiff Station	New Station -	0 36	—	—	—	- - -	- - -	—
			Cardiff - -	Pontlottyn Station	21 28						
			Pontlottyn Station	Pontlottyn Viaduct, North.	—	—	0 9	—			
			Pontlottyn Viaduct	Rhymney - -	0 78						
			Walnut Tree Junction.	Nantgarw - -	1 35						
			Nantgarw -	Aber Junction -	—	—	2 13				
			Bargoed Junction	Bargoed West Junction.	0 24						
			Bargoed West Junction.	Deri Junction -	—	—	—	2 36			
			Ystrad Junction -	Penallta Junction	1 40						
			Caerphilly West Junction.	Penrhos Junction	—	—	—	1 0			
Rhymney Joint Line. *See* London and North-Western.			Caerphilly East Junction.	Junction with B. and M. Railway near Caerphilly.	0 33						
Merthyr Joint Lines	6 57	—	Merthyr (Quakers' Yard).	Merthyr - -	6 57						
	33 11	5 58			33 11	—	2 22	3 36			

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		m. ch.	m. ch.	m. ch.	Wheelock - -	Elton Crossing -	m. ch. —	m. ch. —	m. ch. —	m. ch. —	m. ch. 1 9	
					Elton Crossing -	Sandback Junction.	—	—	—	—	0 34	
					Jamage Junction	Jamage - -	—	—	—	—	0 44*	
					Knutton - -	Pool Dam - -	—	—	—	—	1 25	
					Diglake - -	Bignall End -	—	—	—	—	0 24†	
					Apedale Junction	Apedale - -	—	—	—	—	1 40*	
					Talke Junction -	Talke - -	—	—	—	—	1 30*	* Worked on system No. 3.
					Congleton Lower Junction.	Congleton (Town)	—	—	—	—	1 0*	† Worked on system No. 1.
					Newfields Junction	Newfields - -	—	—	—	—	0 60*	
					Hyatts Junction -	Grange - -	—	—	—	—	1 21*	
					Froghall Junction	Froghall - -	—	—	—	—	0 50†	
					Oakamoor Station	Oakamoor - -	—	—	—	—	0 24†	
					Normacot Junction.	Botteslow Junction.	—	—	—	—	3 64*	
					Hulme Junction -	Hulme Colliery -	—	—	—	—	0 36†	
					Hanley Junction -	Hanley Goods -	—	—	—	—	0 13†	
		0 50								1 20	19 15	
- - -	- - -	—	—	—	Tryfan Junction -	Bryngwyn - -	—	—	—	2 35	*0 44	*This is an incline worked by a wire rope for mineral traffic only.
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- -	- - -	—.	—	—	- - -	- - -	—	—	—	—	0 34	Dockyard Extension.
											0 51	Hobb's Point Extension.
- - -	- - -	—	—	—	- -	- - -	—	—	—	—	2 2	Bassaleg Junction to Alexandra Dock Junction.
- - -	- - -	—	—	—	Ravenglass -	Boot - -	7 11	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	4 13	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	1 4	Dock Branch, Cardiff Station.
											0 48	Hendredenny Colliery Branch.
											0 60	New Tredegar Colliery Branch.
											0 25	Merthyr Vale Branch.
											2 57	Colliery Branches.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*											
RHYMNEY AND GREAT WESTERN JOINT.	m. ch. 9 19	m. ch. —	Llancainch - -	Dowlais - -	m. ch. 9 19	m. ch. --	m. ch. —	m. ch. --	- - -	- - -	m. ch. —
SEVERN AND WYE AND SEVERN BRIDGE.	2 79	19 15	Sharpness West Box.	Sharpness East Box.	0 31	--	—	--	Parkend -	Coleford Junction.	0 60
			Sharpness East Box.	Severn Bridge Station.	—	—	—	0 79			
			Severn Bridge Station Loop - -		0 16						
			Severn Bridge Station.	Lydney Junction	—	—	—	2 18			
			Junction line with G. W. Ry., Lydney		0 9						
			Lydney Junction	Lydney Town -	1 12						
			Lydney Town -	Tufts Junction -	—	—	—	1 50			
			Tufts Junction Loop - -		0 14						
			Tufts Junction -	Parkend - -	—	—	—	1 28			
			Coleford Junction	Speech House Road	—	-	—	1 76			
			Speech House Road	Drybrook Road -	—	2 42					
			Seiridge Junction	Upper Lydbrook -	--	2 33					
			Upper Lydbrook Loop - - -		0 17						
			Upper Lydbrook -	Lydbrook Junction.	—	1 59					
			Coleford Junction	Coleford -	—	3 55					
					2 19	10 29	—	8 11			0 60
SHEFFIELD AND MIDLAND COMMITTEE.	10 72	—	Reddish Junction	Ashburys Junction	3 22	—	—	—	- - -	- - -	—
			Woodley - -	Hyde Junction -	2 48						
			Hough Green -	Widnes East -	5 2						
					10 72						
SOUTH-EASTERN	362 50	41 71	Throughout -	- - -	362 50	41 66	--	—	- - -	- - -	—
Chatham Extension -	1 20	—	- - -	- - -	1 20						
Cranbrook Line -	—	11 35			—	—	—	11 35			
Dover and Deal Joint Line. See p. 14.											
	363 70	53 26			363 70	41 66	—	11 35			
SOUTH-WESTERN AND MIDLAND SOMERSET AND DORSET JOINT LINE.	27 71	76 4	Bath - - -	Midford - -	—	—	—	3 69	- - -	- - -	—
			Midford - -	Wellow - -	2 31						
			Wellow - -	Radstock - -	—	—	—	3 70			
			Radstock - -	Templecombe -	25 40						
			Templecombe -	Wimborne -	—	—	—	27 41			
			Bailey Gate -	Broadstone -	—	—	—	4 42			
			Evercreech Junction.	Highbridge Loco. Yard Box.	—	—	—	22 10			
			Highbridge Loco. Yard Box.	Burnham - -	—	1 59					
			Glastonbury -	Wells - -	—	5 26					
			Edington Junction	Bridgwater - -	—	—	—	7 7			
					27 71	7 5	—	68 79			
SOUTHWOLD - -	—	9 0	- - -	- - -	—	—	—	—	- - -	- - -	—
SWANSEA AND MUMBLES.	—	5 10	- - -	- - -	—	—	—	—	- - -	- - -	—

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns): (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch	m. ch.	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	Drybrook Road -	Cinderford - -	0 55	—	—	—	15 75*	* Of this total 2 m. 62 ch. are private branches.
							0 55				15 75	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	Waterloo, S.E.R. -	Waterloo, S.W.R..	0 5	—	—	—	5 48	
							0 5	—	—	—	5 48	
- - -	- - -	—	—	—	- - -	-	—	—	—	—	—	
- - -	- - -	—	—	—	Halesworth -	Southwold -	—	—	—	9 0	—	
- - -	- - -	—	—	—	Swansea -	Mumbles -	—	—	5 10	—	0 61	

Railway Company	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
ENGLAND AND WALES—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
TAFF VALE - -	59 31	20 52	Cardiff Terminus -	Brandy Bridge -	23 56	—	—	—	- - -	- - -	—
Joint Line - - (Total length 37¼ chains).	0 19		Brandy Bridge -	Maerdy Junction	0 19						
			Rhondda Junction.	Treherbert R. and S. Bay Junction.	10 68						
			Rhondda Fach Junction.	Maerdy Junction -	4 77	0 8					
			Maerdy Junction	Maerdy - -	—	1 42					
			*Aberdare Junction.	Aberdare - -	7 37						
			Llantrissant Junction.	Maesaraul -	—	5 18					
			Llantrissant Junction.	Cowbridge -	0 13	5 53					
			Cowbridge Junction.	Aberthaw -	0 24						
			Stormstown -	Windsor Passing Siding, South.	—	1 22					
			Windsor Passing Siding, South.	Windsor Passing Siding, North.	0 16						
			Windsor Passing Siding, North.	Ynysybwl Station	—	0 64					
			Penarth Junction	Biglis Junction -	11 60						
	59 50	20 52			59 50	14 47					
TALYLLYN - -	—	6 50	- - -	- - -	—	—	—	—	- - -	- - -	—
WEST LANCASHIRE	23 64	—	Southport -	Preston - -	14 63	—	—	—	- - -	- - -	—
			Ribble Junction -	Middleforth Junction.	0 22						
			Penwortham Junction.	Middleforth Junction.	0 25						
			Middleforth Junction.	Whitehouse Junction.	0 52						
			Roe Lane Junction.	Meols Cop - -	0 32						
			Hawkshead Street Junction.	Meols Cop -	0 31						
			Meols Cop - -	Hillhouse Junction.	6 79						
					23 64						
WEST LONDON EXTENSION.	5 8	—	Junc. with West London Line.	Longhedge Junction.	3 19	—	—	—	- - -	- - -	—
			Latchmere Junction.	W. London Junction (L. & S.W.)	0 38						
			Latchmere Junction.	Clapham Junction (L. & S.W.)	0 49						
			Latchmere Junction.	Clapham Junction (L. B. & S. C.)	0 62						
					5 8						
WEST RIDING AND GRIMSBY JOINT. (*See* Great Northern.)											
WEST SOMERSET MINERAL.	—	6 0	- - -	- - -	—	—	—	—	- - -	- - -	—
WIRRAL - - -	4 16	6 6	Birkenhead Park	New Brighton -	4 16	—	—	—	- - -	- - -	—
			Bidston Junction	West Kirby -	—	6 6					
					4 16	6 6					
WREXHAM, MOLD, AND CONNAH'S QUAY.	13 13	4 44	Wrexham - -	Hawarden Bridge	13 13	—	—	—	- - -	- - -	—
			Brymbo Junction.	Brymbo - -	—	3 53					
			Buckley Junction.	Buckley - -	—	0 71					
					13 13	4 44					

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of: System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
											m. ch.	
- - -	- - -	—	—	—	Cowbridge Junction.	Aberthaw - -	6 5	—	—	—	—	* Between these points there is also a third line of 73 chains used as a single passenger line, and worked on the "Tyers" Train Tablet System (Absolute Block Telegraph).
							6 5				39 47	
- - -	- - -	—	—	—	Towyn - - -	Abergynolwyn -	6 50	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	1 11	River Douglas to Tarleton.
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	Watchet - -	Comberow - -	6 0	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	—	
- - -	- - -	—	—	—	- - -	- - -	—	—	—	—	5 1‡	Buckley Junction to Connah's Quay.
											1 29‡	Brymbo Station to Steel Works and Vron.
											2 44§	Frood Junction to Bryn Mally and Moss.
											1 8§	Hawarden Bridge to Connah's Quay.
											10 2	‡ Worked on system No. 3. § Worked on system No. 1.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
SCOTLAND.											
CALEDONIAN - -	m. ch. 445 6	m. ch. 211 49	Carlisle (No. 4 Box).	Glasgow (Buchanan Street Box).	m. ch. 104 46	m. ch. —	m. ch. —	m. ch. —	- -	- -	m. ch. —
			Port Carlisle Branch - -		0 40						
			Kirtlebridge Junction.	Annan -	—	—	—	5 43			
			Lockerbie - -	Dumfries Junction	—	—	—	14 44			
			Beattock - -	Moffat - -	—	1 66					
			Symington - -	Peebles Box -	—	—	—	19 4			
			Strawfrank Junction.	Dolphinton Junction.	0 23						
			Carstairs - -	Edinburgh Box -	27 45						
			Dalry (Middle) Junction.	Haymarket (West) Junction.	0 64						
			Dolphinton Junction.	Bankhead - -	—	1 50					
			Wilsontown (S.) Junction.	Wilsontown -	1 33	1 33					
			Ravelrig Junction	Balerno Junction	—	—	—	6 2			
			Slateford Junction	Leith Box - -	5 40						
			Dalry Junction -	Coltbridge Junction.	0 38						
			Midcalder Junction.	Mossend (South) Junction.	22 74						
			Silvermuir (East) Junction.	Silvermuir (South) Junction.	0 19						
			Cleghorn Junction	Lanark Box -	2 42						
			Douglas (East) Junction.	Douglas (South) Junction.	—	—	0 24				
			Douglas (Smyllum West) Junction.	Muirkirk Junction.	—	—	—	19 18			
			Law Junction -	Holytown Junction.	5 40						
			Cleland Junction	Omoa Junction -	1 25						
			Omoa Junction -	Morningside -	—	—	—	3 73			
			Lesmahagow Junction.	Haughhead Junction.	1 79						
			Hamilton Junction.	Coalburn -	13 67	—	—	7 77			
			Stonehouse Junction.	Stonehouse - -	—	3 27					
			Southfield Junction.	Blackwood Box -	1 62						
			Strathaven Junction.	Strathaven - -	6 5	—	—	4 15			
			Auchenraith Junction.	Blantyre - -	0 51						
			Milnwood Junction.	Fullwood Junction	0 33						
			Fullwood Junction	Uddingston Junction.	3 55						
			Mossend (West) Junction.	Mossend (North) Junction.	0 39						
			Whifflet (North) Junction.	Rosehall Junction	0 33						
			Coatbridge Junction.	Langloan - -	0 50						
			Airdrie Box - -	Rutherglen Junction.	9 22						
			Airdrie Junction -	Chapelhall - -	1 79						
			Chapelhall -	Newhouse -	—	—	—	1·34			
			Lesmahagow Junction.	Glasgow (Central)	12 57						
			Bothwell Junction.	Bothwell Box -	1 10						
			Dalmarnock Junction.	Germiston (Low) Junction.	4 39						
			Rutherglen (West) Junction	Clyde Junction -	0 36						
			Loudon Road Junction.	Loudon Road Junction Box.	0 28						
			Gushetfaulds Junction.	Langside Junction	0 23						
			Gushetfaulds Junction.	Shiels Junction -	1 29						
			Eglinton Street Junction.	Strathbungo Junction.	0 69						
			Strathbungo Junction.	Terminus Junction.	0 49						
			Line connecting Caledonian Railway with Glasgow and Paisley Joint line at Bridge Street Junction, Glasgow.		0 8						
			Busby Junction -	Busby Box - -	3 60						
			Busby Box -	Hunthill Junction	—	—	—	7 53			
			Paisley Junction Stonybrae Box).	Gourock - -	18 73						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

- - Worked by Telegraph.

Not on either of the foregoing Systems.

From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.
- - -	- -	m. ch. —	m. ch. —	m. ch. —

Single Lines of Railway (not included in the foregoing Columns),
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(2.) Worked under the Train Porter System; or
(3.) Worked under the Train Staff System.

From	To	Distance of: System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.
		m. ch.	m. ch.	m. ch.	m. ch.
Bankhead - -	Dolphinton - -	—	—	—	9 23
Grangemouth (South Box).	Grangemouth -	—	—	—	0 25
Methven Junction	Methven - -	—	—	—	1 22
Blairgowrie Box -	Blairgowrie - -	—	—	—	0 22

Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*

m. ch. 74 59

Remarks.

Note.—The Caledonian Company, in addition to the 211 m. 49 ch. of single line, has a single line of 1 m. 38 ch. of tramway worked by horses from Inchture Station to Inchture Village.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.							On the Permissive Block System.		
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	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.		From	To	Distance of Double Line.
SCOTLAND—*continued.*												
CALEDONIAN—*cont.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.				m. ch.
			Wemyss Bay Junction.	Berryards Box -	—	—	—	2 6				
			Berryards Box -	Upper Greenock -	—	—	0 15					
			Upper Greenock -	Wemyss Bay -	—	7 65						
			Gartsherrie (South Junction).	Gartsherrie (N. British Junc.).	0 11							
			Garnqueen (South) Junction.	Garnqueen (North) Junctn.	0 36							
			Gartcosh Junction	Aberdeen - -	145 37							
			Greenhill (Lower) Junction.	Greenhill (Upper) Jn. with North British.	0 60							
			Bonnybridge Junction.	Bonnybridge -	0 66							
			Carmuirs (East) Junction.	Carmuirs (West) Junction.	0 38							
			Grangemouth (Branch) Junc.	Grangemouth (South Box).	2 24							
			Larbert Junction	Denny - -	—	3 10						
			Carmuirs West Jn. (for Denny).	Denny West Junction.	0 27							
			Alloa Junction -	Throsk - -	4 9							
			Throsk - -	Forth Bridge -	—	—	—	0 30				
			Forth Bridge -	Longcarse Junction.	0 72							
			Dunblane - -	Callander (C. & O.) Junction.	—	—	—	10 15				
			Crieff Junction -	Crieff East Box -	—	—	—	8 72				
			Crieff East Box -	Crieff - -	0 8							
			Crieff - -	Almond Valley Junction.	—	—	—	16 3				
			Perth (St. Leonard's Br. Box).	Dundee (Buckingham Jn. Box).	20 55	—	—	0 22				
			Ninewells Junction.	Newtyle Box -	—	—	—	14 29				
			Newtyle Box -	Newtyle Junction	0 27							
			Broughty Junction.	Forfar Junction -	—	—	—	17 10				
			Kirriemuir Junction.	Kirriemuir - -	—	—	—	3 12				
			Newtyle Junction	Ardler Junction -	—	—	—	1 37				
			Newtyle Junction	Alyth - -	—	—	—	6 17				
			Coupar Angus Junction.	Blairgowrie Box -	—	—	—	4 6				
			Guthrie Junction	Friockheim Junction.	1 30							
			Glasterlaw Junction.	Arbroath (St. Vigeans Junc.)	7 1							
			Bridge of Dun Junction.	Brechin Box -	—	4 0						
			Dubton - -	Montrose - -	—	3 0						
	445 6	211 49			445 6	26 16	0 39	173 62				
Solway Junction -	—	11 63	- - -	- - -	—	—	—	—	- - -	- - -	- - -	—
			Annan - -	Kirkbridge Junction.	—	—	—	6 56				
			Abbey Junction -	Brayton Junction	—	—	—	5 7				
			Crieff - -	Crieff West Box -	0 4							
Crieff and Comrie -	0 4	5 65	Crieff West Box -	Comrie - -	—	—	—	5 65				
Callander and Oban	—	71 45	Callander (C. and O.) Junction.	Oban - - -	—	—	—	71 45	- - -	- - -	- - -	- -
Killin - -	—	5 13	Killin Junction -	Lock Tay (Killin Pier).	—	5 13						
Cathcart District -	2 11	—	Cathcart Junction	Cathcart - -	2 11							
Lanarkshire and Ayrshire.	13 45	6 28	Barrmill Junction	Ardrossan Pier -	12 45	—	—	—	- - -	- - -	- - -	—
			Giffen - -	Glengarnock -	—	—	—	3 15				
			Glengarnock -	Kilbirnie - -	1 0							
			Kilwinning Junction.	Irvine - -	—	—	—	3 13				
	460 66	312 23			460 66	31 29	0 39	269 23				
CITY OF GLASGOW UNION.	4 57	—	Sighthill Junction	Pollok Junction -	4 57	—	—	—	- - -	- - -	- - -	—

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

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Not on either of the foregoing Systems.							Distance of					
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
										11 12		
- - - -		—	—	—	- - -	- - -	—	—	—	—	0 32	
- - - -		—	—	—	- - -	- - -	—	—	—	—	0 30	
- - - -		—	—	—	- - -	- - -	—	—	—	—	1 30	
							—	—	—	11 12	76 71	
- - - -		—	—	—	- - -	- - -	—	—	—	—	1 70	Double line.
											0 59	Single line, worked by telegraph and train staff.
											1 49	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
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SCOTLAND—*continued.*												
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
DUNDEE AND ARBROATH JOINT.	17 7	—	Dundee (East) No. 2 Gates Box.	Arbroath South Box.	16 3	—	—	—	- -	- - -	—
			Arbroath Wellgate Box.	St. Vigeans Junction.	0 30						
					16 33						
GLASGOW AND KILMARNOCK JOINT.	26 28	2 19	Glasgow - -	Kilmarnock -	23 42	—	—	—	- - -	- - -	—
			Lugton Junction -	Barmill - -	2 66						
			Barmill - -	Beith - -	—	—	—	2 19			
					26 28	—	—	2 19			
GLASGOW AND PAISLEY JOINT.	7 52	—	Glasgow - -	Paisley - -	6 55	—	—	—	- - -	- - -	—
			Ibrox Junction -	Govan - -	0 77						
					7 52						
GLASGOW AND SOUTH-WESTERN.	241 79	93 52	St. John's Junction.	Bridgeton Cross South Junction.	0 25	—	—	—	- - -	- - -	—
			St. Enoch - -	Clyde Junction -	0 30						
			Stockwell Street -	Saltmarket Junction.	0 16						
			Port Eglinton Junction.	Canal Junction -	9 7						
			Corsebar Junction	Meikleriggs - -	0 36						
			Potterhill Station	Potterhill Junction.	1 39						
			Paisley Junction	Kilmarnock No. 1 Cabin.	26 54						
			Kilmarnock No. 2 Cabin.	Lockerbie Junction.	57 61						
			Pleasance Junction.	Gretna Junction	24 12						
			Arkleston Junction.	Renfrew Wharf -	3 54						
			Elderslie Junction	Greenock (Prince's Pier).	15 26						
			Johnstone Junction.	Cart Junction	0 40						
			Dalry Junction -	Ayr, No. 1 - -	17 36						
			Kilwinning Junction.	Castlehill Junction.	4 77						
			Princes Street -	Ardrossan Harbour	0 43						
			Dubbs Junction -	Byrehill Junction	0 59						
			Holm Junction -	Fairlie Pier -	9 35						
			Fairlie Pier Junction.	Largs - -	2 29						
			Castlehill Junction.	Parkhouse Junction.	0 21						
			Busby Junction -	Irvine Junction -	5 51						
			Barassie Junction	Kilmarnock Junction.	7 57						
			Barassie Junction	Lochgreen Junction (Troon Loop Line).	2 19						
			Newton Junction	Mauchline Junction.	10 68						
			Hawkhill Junction.	Blackhouse Junction.	0 22						

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph. Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.					Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
		Distance of Single Line.					Distance of				
From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.	
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.
Dundee East Station.	Dundee (East) No. 2 Gates Box.	0 33*	—	—			—	—	—	—	0 40‡
											5 42†
Arbroath, South Box.	Arbroath, Wellgate Box.	0 21*									
		0 54									6 2
		—	—	—			—	—	—	—	0 76
											0 35
											0 31
											1 62
		—	—	—			—	—	—	—	0 54
											0 25
											0 26
											1 25
		—	—	—			—	—	—	—	—
											0 8
											0 30
											0 27
											0 27
											0 28
											0 53
											0 18
											0 57
											0 16
											1 73
											0 22
											1 59
											1 53
											3 70
											0 55
											1 2
											0 38

* Worked on the electric bell telegraph system, and "Station Yard," principle.

† Worked under system No. 3.

‡ Worked under system No. 1.

Broughty Junction to Broughty Pier Station.
Elliot Junction to Carmyline.
Kennishead to Spiersbridge.
Old Barrhead Line at S Side Station.
Goods Station Branch, Kilmarnock.
Loops at Paisley.
Branch to Paisley Goods Station.
Off Govan Branch.

Time Interval.

From.	To.	Double line m. c
Kilmarnock No. 1.	Kilmarnock No. 2.	0
Lockerbie Jn.	Pleasance Jn.	0
Ayr No. 1 -	Ayr No. 2 -	0
Castlehill Jn.	Princes Street, Ardrossan.	0
		1

Corkerhill Branch.
Branch to Ferguslie Fire Clay Works
Branch to Renfrew Harbour.
Paisley Goods to Abercorn Station.
Cart Junction to Cartside Station.
Cartside Junction to North Johnst Station.
Branch to Shanks Works.
Linwood Branch.
Clippens Branch.
Garvel Dock Line.
Greenock Harbour Branch.
Swinlees Branch.
Blair Branch.§
Douro Branch, Blacklands Junction Terminus at 26, Fergushill Pit.
Ardeer Ironworks Branch.§
Nobels Branch.§
Ardrossan Branch to West Breakwa

§ Only worked over.

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
SCOTLAND—*continued.*											
	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
GLASGOW AND SOUTH-WESTERN —*continued.*			Ayr South Cabin	Dalrymple Junction.	3 1						
			Dalrymple Junction.	Dalrymple Station	0 74						
			Dalrymple Junction.	Dalmellington -	—	—	—	11 51			
			Dalrymple Station	Maybole Junction	—	—	—	4 0			
			Maybole Junction	Maybole Station -	0 66						
			Maybole Station -	Killochan - -	—	—	—	9 61			
			Killochan - -	Girvan Station -	2 46						
			Girvan Junction -	Challock Junction	—	—	—	30 31			
			Holehouse Junction.	Belston Junction	—	6 9					
			Drongan - -	Annbank No. 2 -	—	—	—	4 53			
			Annbank No. 1 -	Annbank No. 2 -	0 21						
			Hurlford Junction	Newmilns - -	5 40						
			Auchinleck Junction.	Muirkirk - -	10 11						
			Muirkirk Junction with Cal. Co.		—	—	—	0 30			
			Cumnock Junction	Logan Junction -	0 27						
			Cronberry Junction.	Drongan - -	—	11 42					
			Castle Douglas Jn., Dumfries.	Dalbeattie - -	14 37						
			Dalbeattie - -	Castle Douglas No. 1.	—	—	—	4 65			
			Castle Douglas No. 1.	Castle Douglas No. 2.	0 23						
			Castle Douglas No. 2.	Kirkcudbright -	—	10 30					
GLASGOW CITY UNION.	—	—	Springburn -	Pollok Junction -							
PORTPATRICK AND WIGTOWNSHIRE.	—	—	Castle Douglas -	Junction with Wigtownshire Joint Line.							
			Junction with Wigtownshire Joint Line.	Challoch Junction							
			Challoch Junction	Stranraer Harbour Junction.							
			Newton Stewart Junction.	Whithorn -							
			Millisle - -	Garlieston -							
GLASGOW, PAISLEY, AND KILMARNOCK JOINT.	—	—	Gorbals Junction	Kilmarnock Junction.							
			Lugton Junction	Barrmill Junction							
			Ibrox Junction -	Govan - -							
			Glasgow - -	Paisley - -							
			Barrmill Junction	Reith - -							
					240 63	28 1	—	65 51			

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

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From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of: System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.		
		m. ch.	m ch.	m. ch.			m. ch.	m ch.	m. ch.	m. ch.	m. ch.	
											0 66	Irvine Harbour Branch.
											0 32	Irvine Harbour. Branch along New Quay.
											0 31	Irvine Chemical Branch.*
											0 60	Perceton Branch.
											0 18	Busbie Colliery Branch.*
											2 6	Barassie Junction to Troon Harbour.
											1 35	Fairlie Branch, Troon Line.
											0 13	Troon Harb. Termination of K. and T. Ry. at store to end of West Breakwater.
											0 51	Troon Harb. K. & T. Ry., near Temple Hill, along East Breakwater.
											0 64	Templehill Junction and St. Meddans Junction.
											0 30	Girvan Junction to Girvan Goods Station.
											0 64	Falkland Junction to Ayr Goods Station.
											0 9	Newton Lodge Junction Line.
											0 20	Old Harbour Branch, Ayr.
											0 58	New Harbour Branch, Ayr.
											1 2	Ayr Dock Lines, Nos. 1 to 4.
											3 10	Monkton Junction to Mossblown Junction.
											0 30	Maybole Jn. to Maybole Goods Station.
											0 14	Branch to Girvan Harbour.
											1 37	Mayfield Branch.
											1 24	Mayfield Branch.*
											0 35	Goatfoot Branch.*
											0 24	Montgomery Quarry Branch.*
											0 37	Rankinston Branch.
											2 30	Dykes Branch.*
											0 36	Lugar Junction to Lugar Ironworks.
											1 24	Gasswater Branch.
											2 0	Gilmilnscroft Branch.*
											Length included with Kilmarnock Joint Line.	South Side to Langside Junction. Goods Station Branch at Kilmarnock. Thornlie Bank Branch.
											0 27	Victoria Pit Branch (horse).
											0 18	Woodhill Branch.
											0 19	Bellahouston Junction.
											0 15	Garliestown to Garlies town Harbour.
												* Only worked over.
							—	—	—	—	40 55	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
			Worked by Telegraph - - - - - - - -									
			On the Absolute Block System.						On the Permissive Block System.			
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
SCOTLAND—*continued.*												
GREAT NORTH OF SCOTLAND.	m. ch. 35 36	m. ch. 277 79	Aberdeen - -	Elgin viâ Grange (S. Junc.) and Buckie.	m. ch. 27 46	m. ch. —	m. ch. 31 53	m. ch. 28 07	- - -	- - -	m. ch. —	
			Grange (South Junction).	Elgin viâ Craigellachie.	—	—	27 70	4 27††				
			Grange Station -	Grange North Junction.	—	—	0 56					
			Dyce - -	Peterhead - -	—	—	37 70					
			Maud Junction -	Fraserburgh -	—	—	16 14					
			Kintore - -	Alford - -	—	—	15 68					
			Inveramsey - -	Macduff - -	—	—	29 67					
			Tillynaught Junction.	Banff - -	—	—	6 5					
			Lossie Junction -	Lossiemouth -	—	—	4 38					
			Craigellachie -	Boat of Garten -	—	—	33 46					
			Ferryhill - -	Ballater - -	6 73	—	35 64					
			Aberdeen - -	Ferryhill - -	0 54							
					35 13	—	239 71‡	32 27				
HIGHLAND - -	6 65	422 42	Inverness - -	Dalcross - -	6 65	—	—	—	- - -	- - -	—	
			Buckie - -	Portessie - -	—	—	—	1 38				
NORTH BRITISH -	469 55	407 70	Edinburgh East -	Granton - -	3 60	—	—	—	- - -	- - -	—	
			Lochend Junction	London Road Junction.	0 27							
			Bonnington (S. Junction).	North Leith -	0 73							
			Bonnington (N. Junction).	Bonnington (East Junction).	0 17							
			Easter Road Junction.	Piershill Junction	0 77							
			Abbeyhill Junction	Berwick N.E. -	56 43							
			Newhailes Junction.	Musselburgh -	0 79							
			Glencsk Junction	Dalkeith - -	0 30							
			Portobello East Junction.	Galashiels North	30 8							
			Galashiels (Central).	Carlisle No. 1 -	64 3							
			St. Boswells, Kelso Junc.	Jn. with N.E. Ry. near Sprouston.	12 43							
			Hardengreen Junction.	Hawthornden Junction.	3 21							
			Niddrie West Junction.	Niddrie South Junction.	0 59							
			Niddrie West Junction.	Niddrie East Junction.	1 32							
			Haymarket West Junction.	Gorgie Junction -	0 40							
			Haymarket Central Junction.	Niddrie North Junction.	6 66							
			Boness High Junction.	Boness Low Junction.	0 33							
			Polmont Junction	Grahamston (East)	3 2							

OF OTHER RAILWAYS WORKED BY THEM.
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			Distance of Single Line.				Distance of					
From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	From	To	System as above. (1.)	Train Porter System. (2.)	Train Staff System. (2.) With Tickets.	Train Staff System. (2.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch	
- - -	- - -	—	—	—	Inverurie - -	Old Meldrum -	5 61	—	—	—	—	† From Tillynaught to Lossie Junction. †† From Drummuir to Dufftown.
							5 61					‡ These lines are worked under the system in which only one engine in steam or two or more engines coupled together are allowed to be on the single line or portions thereof, at one and the same time.
- - -	- - -	—	—	—	Dalcross - -	Stanley - - -	129 72	—	—	—	--	
					Inverness - -	Wick - - -	161 7					
					Forres - -	Keith - -	30 27					
					Georgemas - -	Thurso - - -	6 52					
					Dingwall - -	Strome Ferry -	53 6					
					Keith - - -	Buckie - - -	12 0					
					Alves - -	Hopeman - -	7 5					
					Ballinluig - -	Aberfeldy - -	8 59					
					Fodderty Junction	Strathpeffer -	2 40				0 57½	From Inverness to Caledonian Canal.
					Aviemore - -	Carr Bridge -	6 56				0 45	From Inverness to Harbour.
					Orbliston Junction	Fochabers -	3 0				0 57	Burghead Branch.
							421 4					
- - -	- - -	—	—	—	Rawyards East -	Rawyards West -	—	0 21	—	—	—	
					Seafield Junction	South Leith Station.	—	0 69				
					Esk Valley Junction.	Polton - - -	—	—	2 8			
					Hawthornden Junction.	Penicuick - -	—	—	4 31			
					Monktonhall Junction.	Macmerry - -	—	—	8 13			
					Roxburgh Junction.	Jedburgh - -	—	—	7 8			
					Drumburgh - -	Port Carlisle -	—	—	2 54			
					Riccarton Junction.	Hexham Junction	—	—	40 71			
					Scots Gap Junction	Morpeth, N.E. Station.	—	—	11 8			
					Scots Gap Junction	Rothbury - -	—	—	13 4			
					Leuchars South Junction.	St. Andrews (Links).	—	—	4 57			
					Kincardine Junction.	Kincardine - -	—	—	—	4 0		

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			Worked by Telegraph - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
SCOTLAND—*continued.*											
NORTH BRITISH—*continued.*	m. ch.	m. ch.	Grahamston West	Larbert Junction	m. ch. 2 13	m. ch.	m. ch.	m. ch.			m. ch.
			Edinburgh West	Polmont Station -	22 9						
			Polmont Junction	Cowlairs West Junction.	22 72						
			Cowlairs Station	Glasgow (Queen Street).	1 40						
			Cowlairs West Junction.	Sighthill C.U. Junction.	0 50						
			Cowlairs East Junction.	Cowlairs North Junction.	0 18						
			Cowlairs West Junction.	Balloch Pier -	18 78						
			Dalreoch Tunnel	Helensburgh -	6 78						
			Knightswood N. Junction.	College East C.U. Junction.	5 56						
			Bridgeton Cross N. Junction.	Bridgeton Cross -	0 67						
			Partick Junction	Hyndland - -	0 74						
			Knightswood S. Junction.	Maryhill West Junction.	0 69						
			Lenzie Junction -	Blane Valley Junction.	5 5						
			Kelvin Valley West Junction.	Kelvin Valley East Junction.	0 29						
			Glasgow (Bellgrove).	Caldercruix - -	14 29						
			Sunnyside Junction.	Bothwell Junction	6 19						
			Greenside Junction.	Foot of Ballochney Incline.	0 56						
			Shettleston Junction.	Hamilton - -	7 45						
			Bathgate Junction (Ratho).	Polkemmet Junction.	10 47						
			Rawyards East -	Arbuckle - -	1 49						
			Gartsherrie N.B. Junction.	Garnqueen Junction.	0 41						
			Winchburgh Junction (Lower).	Dalmeny North Junction.	4 32						
			Inverkeithing East Junction.	Inverkeithing North Junction.	0 23						
			Corstorphine Junction.	Townhill Junction	15 12						
			Touch South Junction.	Touch North Junction.	0 34						
			Inverkeithing Central Junction.	Tayport North -	42 53						
			Leuchars (North Junction).	Camperdown Junction.	9 28						
			Dundee Central Junction.	Buckingham Junction.	0 18						
			Ladybank North	Hilton Junction -	16 54						
			Montrose South Junction.	Montrose North Junction.	0 32						
			Hillside - -	Kinnaber Junction	0 38						
			Thornton South Junction.	Thornton West Junction.	0 21						
			Thornton Central Junction.	Dunfermline (East).	14 71						
			Dunfermline (West).	Shore Road, L. C. Stirling.	20 1						
			Alloa West Junction.	Longcarse Junction.	0 45						
			Alloa East - -	Tillicoultry - -	3 16						
			Cowdenbeath Junction.	Bridge of Earn Junction.	23 0						
			Roslin - - -	Glencorse - -	—	2 1					
			Blane Valley Junction.	Gartness Junction	—	11 16					
			Markinch Junction	Leslie - -	—	4 17					
			Buchlyvie Junction.	Aberfoyle - -	—	5 32					
			Maryhill East Junction.	Kilsyth - -	—	11 19					
			Montrose North Junction.	Broomfield Junction.	—	0 54					
			Longniddry -	Haddington -	—	4 60					
			Ladburn - -	Dolphinton - -	—	9 70					
			Pebbles engine shed.	Peebles, Caledonian Junction.	—	0 35					
			Selkirk Junction, Galashiels.	Ikirk - - -	—	5 14					

OF OTHER RAILWAYS WORKED BY THEM.

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Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line.		From	To	Distance of					
			Worked by the Train Staff System in addition,	Worked *without* the Train Staff System.			System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.)			
									With Tickets.	Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	

Railway Company.	Total Length of the Company's Railways open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
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SCOTLAND—*continued.*											
NORTH BRITISH—*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Longtown - -	Gretna - -	—	3 18					
			Riddings Junction	Langholm - -	—	7 8					
			Reedsmouth -	Scotts Gap Junction.	—	14 2					
			Queensferry Jn. (Ratho).	Dalmeny South Junction.	—	4 6					
			Cambus - -	Alva - -	—	3 45					
			Broomfield Junction.	Bervie - - -	—	12 8					
			Ballochney (Incline Foot).	Rawyards - -	—	—	1 18				
			Causewayend Incline, foot.	Causewayend Incline, top.	—	—	0 38				
			Polkemmet Junction.	Blackstone Junction.	—	—	—	4 65			
			Polkemmet Junction.	Morningside -	—	—	—	13 53			
			Thornton North Junction.	Anstruther New Signal Box.	—	—	—	18 40			
			Tillicoultry -	Kinross Junction	—	—	—	13 50			
			St. Vigeans Junction.	Montrose South Junction.	—	—	—	12 56			
			Montrose North Junction.	Hillside - -	—	—	—	1 50			
			Dalreoch Junction	Dalreoch Tunnel	—	—	—	0 50			
			Polkemmet Junction.	Caldercruix -	—	—	—	9 54			
			Thornton East Junction.	Methil - - -	—	—	—	5 18			
			Portobello -	Seafield Junction	—	—	—	1 76			
			Drem - -	North Berwick -	—	—	—	4 60			
			Preston Junction	RavenswoodJunction.	—	—	—	29 26			
			Millerhill - -	Roslin - -	—	—	—	5 73			
			Hawthornden Junction.	Peebles engine-shed.	—	—	—	15 44			
			Peebles (Caledonian Junction).	Kilnknowe Junction.	—	—	—	17 24			
			Canal Junction, Carlisle.	Silloth - - -	—	—	—	21 4			
			Ladybank -	Mawcarse - -	—	—	—	11 23			
			Milngavie Junction.	Milngavie - -	—	—	—	3 15			
			Boness - -	Causeway Incline, foot.	—	—	—	5 10			
			Causeway Incline, top.	Arbuckle - -	—	—	—	11 74			
Lines Worked:											
Anstruther and St. Andrews.	—	16 2	Anstruther New Signal Cabin.	St. Andrews (Links.)	—	16 2					
Forth and Clyde - -	0 30	29 74	Stirling (Forth and Clyde Jn.).	Stirling, New-bridge Level Crossing.	0 30						
			Stirling New Bridge Level Crossing.	Buchlyvie Junction.	—	—	15 13				
			Gartness Junction	Drymen - -	—	—	1 66				
			Jameston - -	Balloch (Forth and Clyde) Jn.	—	—	0 47				
			Buchlyvie - -	Gartness Junction	—	—	—	6 17			
			Drymen - -	Jamestown -	—	—	—	6 6			
Glasgow, Yoker, and Cyde bank.	—	3 30	Whiteinch Junction.	Clydebank -	—	3 30					
Newport - - -	—	4 66	Tayport - -	Tay Bridge South	—	—	—	4 66			
Eyemouth - -	—	2 71	- - -	- - -	—	—	—	—			—
Total - -	470 5	464 73			470 5	118 37	19 27	224 74			

OF OTHER RAILWAYS WORKED BY THEM.

the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or Portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.						Length of the Portions of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
Not on either of the foregoing Systems.												
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Train Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.		
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
—	—	—	—	—	Burnmouth	Eyemouth	—	—	—	2 71		
								1 10	94 14	6 71	122 19	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under								
			Worked by Telegraph - - - - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
SCOTLAND—*continued.*											
NORTH BRITISH—*continued.*	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.			m. ch.
			Mineral Lines.								
			Sunnyside Junction.	Gunnie - -	0 25						
			Brownieside Junction.	Rawyards -	—	—	1 43				
			Westcraigs - -	Blackhall - -	—	—	7 19				
			Langloan Junction.	Langloan Ironworks.	—	—	0 32				
			Blantyre Junction	Blantyre Pits -	—	—	1 14				
			Trinity Junction -	Warriston Junction.	—	—	0 51				
			Bonnington (East)	Warriston Junction.	—	—	0 47				
			Charlestown Junction.	Charlestown -	—	—	3 42				
			Alloa Central Junction.	New Harbour Branch Junc.	—	—	0 29				
			Townhill Junction.	Lassodie Junction	—	—	4 22				
			Elgin Crossing -	Lilliehill Junction	—	—	1 63				
			Lumphinnans Junction.	Kelty South Junction.	—	—	2 0				
			Avenuehead -	Garngaber High Junction.	—	—	—	3 30			
			Thornton East -	Thornton West Junction.	—	—	—	0 31			
					0 25	—	23 42	3 61			
			New Block Telegraphs complete or in progress but not in practical operation.								
			(*See* page 152.)								
PORTPATRICK AND WIGTOWNSHIRE.	—	31 79	Newton Stewart -	Whithorn - -	—	19 21	—	—			—
			Stranraer - -	Castle Douglas -	—	—	—	53 31			
			Stranraer Harbour Junction.	Stranraer Harbour	—	—	—	0 78			
					—	19 21	—	54 29			

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph. — Not on either of the foregoing Systems.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.					Length of the Portion of Company's Railway and of other Railways worked by them for *Goods and Mineral Traffic only.*	Remarks.
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of: System as above. (1.)	Train Porter System. (2.)	Train Staff System. (3.) With Tickets.	Train Staff System. (3.) Without Ticket.	
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
Mineral Lines.					*Mineral Lines.*							
Interval of Time.					Bonnington New Branch		0 7					*Under System* (3).
Canal Junction.	Carlisle Canal Stn.	0 47			Glencorse	Penicuick Gas Co.'s Works.	0 57					With tickets.
Cowlairs W. Jn.	Sighthill	1 27			Kirkcaldy Harbour Branch		0 51				1 50	St. Leonard's Branch.
Low Level Line at Stobcross.		0 47			Lochore Branch		1 5				0 44	Caledonian Junction. / Caledonian Station, Peebles.
Gunnie	Gartsherrie, North British Jn.	0 48			Dalmonach Branch		0 62				2 72	Smeaton Junction. / Hardengreen.
Garnqueen Junction.	Avenuehead.	1 75			Port Edgar Branch		0 71				0 39	Whifflet Junction. / Calder Ironworks. signal-box.
Bridgeness Branch		0 72			Kirkliston Distillery Siding		0 20				0 58	Elgin Crossing. / Whitemyre.
		5 76			Hartwoodhill Branch		1 45				4 4	Lilliehill / Steel End.
					Castlehill Branch Junction.	Hyndshaw Pit Sidings.	1 60				2 25	Kelty Junction. / Lassodie Junction.
					East Benhar Branch		1 69				0 58	Bo'ness Junction. / Blackbrae Junction.
					Blackbraes Branch		4 15				1 41	Dalmeny South Jn. / S. Queensferry.
					Dykehead and Raebog Branches		5 14				2 35	Uphall / East Calder.
					Thrushbush Branch		1 39				1 32	Calderbank Branch Jn. / Howlet's Nest.
					Bowhouse Branch		1 61				1 57	Addiewell Junction. / Addiewell.
					Bellsdyke Branch, No. 1		0 40					Without tickets.
					Springbank Branches		1 26				1 21	Traneut Branch.
					West Calder Branch		2 4				0 37	Inverkeithing Harbour Branch.
					Ballochney Branch		0 59				0 70	Elgin Crossing. / Lochhead.
					Heathery Knowe Branch		0 79				0 71	Cameron Bridge. / Cameron Pits Jn.
					Gartness Branch		1 7				0 52	Leven Dock Branch.
					Ruchill Branch		0 67				0 51	New Alloa Harbour Branch.
					Woodend Branch		0 76				1 23	Camelon Branch.
					Milngavie	Ellangowan Paper Mills.	0 50				2 2	North Queensferry Branch.
					Crossceroes Branch		0 46				0 42	Rough Castle Signal-box. / Asphalte Ponds Junction.
					Dillichip Branch		0 64				0 40	Commonhead. / Airdie North.
					Earnock Branch		0 52				0 46	Auchenraith Branch.
					Newmains Junction.	Coltness Iron Works.	0 18				0 48	Calder Ironworks. / Head of Palace Craig Branch.
					Exchange Sidings	Coltness Iron Works.	0 32				1 12	East Torrance's. / Calder Quarry.
					Drumshoreland	Broxburn Oil Works.	—	1 50			0 60	Broxburn Junction. / Albion Oilworks.
					Warriston Junction.	Scotland Street	—	0 30			1 19	Whiteinch Junction. / Whiteinch.
					Cameron Pits Junction.	Muiredge	—	0 42			0 48	Bellsdyke Branch No. 2.
					Blairadam Branch		—	0 59			7 20	Sun Tube Works Siding. / Broadrigg Siding.
					Middlemuir Junction.	Garngaber Low Junction.	—	1 50			0 14	Netherton Siding. / End of Knightswood Branch.
					Woodley's Lye	Canal Basin, Kirkintilloch.	—	0 72				
					Broadrigg Siding	North Monkland Junction.	—	1 9				
					Springfield Branch		—	0 10				
					Armadale Branch		—	0 65				
					Langloan Junction.	Point of entrance to Sheepford Branch.	—	0 11				
					Souterhouse Branch		—	0 44				
					Kipps Junction	Sun Tube Works	—	0 42				
					Hyndshaw Pit Sidings.	Castlehill Goods Shed.	—	1 8				
					Coltness Branch		—	0 67				
					Port Dundas Branch		—	0 55				
					Asphalte Ponds Junction.	End of Rough Castle Branch.	—	0 28				
					Knightswood South Junction.	Netherton Siding	—	0 65			41 71	
							33 76	12 68			122 19	Total of Mineral Lines.
		—	—	—	Portpatrick	Stranraer	—	—	—	7 31		
					Millisle	Garliestown	—	—	—	0 78		
							—	—	—	8 29		

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under									
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			On the Absolute Block System.							On the Permissive Block System.		
						Distance of Single Line.						
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.		From	To	Distance of Double Line.
IRELAND.												
BALLINASCARTHY, &c.	m. ch. —	m. ch. 9 0	- - -	- - -	m. ch. —	m. ch. —	m. ch. —	m. ch. —		- - -	- - -	m. ch. —
BALLYCASTLE - -	—	16 10	Ballymoney -	Ballycastle - -	—	16 10	—	—		- -	- - -	—
BELFAST AND COUNTY DOWN.	12 40	63 40	Belfast -	Holywood - -	4 40	—	—	—		- - -	- - -	—
			Holywood -	Bangor - -	—	7 60						
			Belfast - -	Comber - -	8 0	—						
			Comber - -	Newtownards -	—	—	—	5 40				
			Newtownards -	Donaghadee -	—	8 60						
			Comber - -	Ballygowan -	—	—	—	4 0				
			Ballygowan -	North Junction, Downpatrick.	—	14 20						
			Downpatrick -	Newcastle -	—	11 30						
			B. H. Junction -	Ballynahuich -	—	3 40						
			Downpatrick -	Loop Line (near)	—	—	0 30					
			North Junction -	Downpatrick -	—	—	0 40					
			Downpatrick -	Ardglass - -	—	7 40						
					12 40	53 10	0 70	9 40				
BELFAST AND NORTHERN COUNTIES.	33 20	166 1	Belfast - -	Ballymena Passenger Station.	33 20	—	—	—		- - -	- - -	—
			Greenisland -	Larne Town -	—	—	—	16 49				
			King's Bog - -	Ballyclare -	—	3 44						
			Cookstown Junc.	Cookstown - -	—	28 47						
			Ballymena -	Parkmore - -	—	14 1†						
			Ballymena -	Larne Harbour -	—	25 34†						
			Doagh - -	Ballyboley - -	—	5 73†						
			Ballymena -	Derry - -	—	—	—	61 52				
			Coleraine - -	Portrush - -	—	—	—	6 2				
			Limavady Junc. -	Limavady - -	—	3 19						
Derry Central	—	29 22	Magherafelt -	Macfin Junction -	—	29 22						
Limavady and Dungiven.	—	10 25	- - -	- - -	—	—	—	—		- - -	- - -	—
Draperstown -	—	6 50	Draperstown Junc.	Draperstown -	—	6 50						
	33 20	212 18			33 20	116 50		84 23				
CASTLEDERG AND VICTORIA BRIDGE.	—	7 0	- - -	- - -	—	—	—	—		- - -	- - -	—
CAVAN, LEITRIM, AND ROSCOMMON LIGHT.	—	48 39	Belturbet -	Dromod - -	—	33 62	—	—		- -	- - -	—
			Ballinamore -	Drumshambo -	—	12 16						
						45 78						
CLOGHER VALLEY -	—	37 0	- - -	- - -	—	—	—	—		- - -	- - -	—
CORK AND MACROOM DIRECT.	—	24 40	- - -	- - -	—	—	—	—		- - -	- - -	—
CORK AND MUSKERRY LIGHT.	—	26 40	- - -	- - -	—	—	—	—		- - -	- - -	—
CORK, BANDON, AND SOUTH COAST.	—	93 60	Clonakilty Junc.	Clonakilty -	—	9 0	—	—		- -	- - -	—
			Cork - -	Baltimore -	—	—	—	61 60				
			Kinsale Junction	Kinsale -	—	—	—	10 60				
			Drimoleague -	Bantry - -	—	—	—	12 20				
					—	9 0	—	84 60				
CORK, BLACKROCK, AND PASSAGE.	—	6 37	Cork - -	Blackrock -	—	2 0	—	—		- - -	- - -	—
			Blackrock -	Passage - -	—	4 37						
						6 37						

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		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
- -	- -	—	—	—	Ballinascarthy -	Courtmacsherry -	9 0	—	—	—	—	
- -	- -	—	—	—	- - -	- - -	—	—	—	—	—	
- -	- -	—	—	—	- -	- - -	—	—	—	—	—	
-	- -	—	—	—	Larne Town -	Larne Harbour -	—	—	—	1	—	† Narrow gauge.
- -	- -	—	—	—	Limavady -	Dungiven - -	10 25					
							10 25	—	—	1 0		
- -	- -	—	—	—	- - -	-	7 0	—	—	—	—	
- -	- -	—	—	—	Drumshambo -	Arigna -	2 41	—	—	—	—	
- -	- -	—	—	—	Tynan - -	Maguires Bridge	—	—	37 0‡	—	—	‡ Telephonic communication is always made when a train proceeds with a ticket.
- -	- -	—	—	—	Cork - -	Macroom - -	—	—	24 40	—	—	
- -	- -	—	—	—	St. Annes - -	Donoughmore -	3 40				—	§ Worked by telephone communication in addition.
					Cork - - -	Carngrohane -	3 40§					
					Carrigrohane -	Junction - -	2 60§					
					Junction - -	Dripsey - -	5 0§					
					Dripsey - -	Coachford -	4 20§					
					Junction - -	Blarney - -	2 40§					
							26 40	—	—			
- -	- -	—	—	—	- - -	- - -	—	—	—	—	—	
- -	- -	—	—	—	- - -	- - -	—	—	—	—	—	

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	Consisting of Two or more Lines of Rails.	Consisting of a single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.		From	To	Distance of Double Line.	
IRELAND—*continued.*													
DONEGAL.	m ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.				m. ch.	
Section I.	—	13 18	- - -	- - -	—	—	—	—		- - -	- - -	—	
Section II.	—	18 0	Donegal - -	Inver - -	—	—	—	8 0					
Section III.	—	19 0	Inver - -	Killybegs - -	—	—	—	11 0					
		50 18						19 0					
DUBLIN, WICKLOW, AND WEXFORD.	29 20	115 78*	Dublin - -	Bray - -	12 20	—	—	—		- - -	- - -	—	
			Amiens Street -	Killiney - -	11 20								
			Killiney - -	Bray - -	—	3 20†							
			Newcastle -	Wicklow - -	5 60								
			Palace East -	New Ross - -	—	8 0							
			Bray - -	Newcastle -									
			Wicklow - -	Wexford - -	—	—	—	101 0					
			Woodenbridge -	Shillelagh -									
			Macmine - -	Palace East -									
					29 20	11 20	—	101 0					
DUNDALK, NEWRY, AND GREENORE.*	—	26 77	Dundalk - -	Barrack Street, Greenore.	—	12 77	—	—		- - -	- - -	—	
			Newry - -	Greenore - -	—	14							
						26 77							
GREAT NORTHERN -	16	382 21	Dublin - -	Belfast - -	112 40	—	—	—		- - -	- - -	—	
			East Wall Junction	Cabin A. - -	0 20								
			Howth Junction -	Howth - -	1 74	—	—	1 57					
			Drogheda - -	Oldcastle - -	—	—	—	39 40					
			Scarva - -	Banbridge -	—	—	—	6 47					
			Dundalk - -	Enniskillen -	—	—	—	63 0					
			Enniskillen -	Londonderry -	—	—	—	59 31					
			Portadown Junctn.	Omagh - -	—	—	—	41 20					
			Portadown Junctn.	Cavan - -	22 42	—	—	31 58					
			Knockmore Junction.	Antrim - -	—	—	—	18 40					
			Knockmore Junction.	Banbridge -	—	—	—	15 0					
			Armagh - -	Warrenpoint -	—	—	—	27 60					
			Dungannon Junction.	Cookstown - -	—	13 54							
					137 16	13 54	—	304 33					
GREAT SOUTHERN AND WESTERN.													
Northwall to Queenstown.	182 77	—	North Wall -	Kingsbridge -	5 37	—	—	—		- - -	- - -	—	
			Kingsbridge -	Queenstown -	176 68								
Sallins to Naas -	2 0	—	Sallins - -	Naas - -	2 0								
Naas to Tullow -	—	32 40	Naas - -	Tullow - -	—	—	—	Staff. 32 40					
Cherryville Junction to Carlow.	23 18	—	Cherryville Junction.	Carlow - -	23 18								
Carlow to Kilkenny -	—	24 75	Carlow - -	Kilkenny - -	—	—	—	Staff. 24 75					
Bagnalstown to Ballywilliam.	—	20 60	Bagnalstown -	Ballywilliam -	—	—	—	Staff. 20 60					
Portarlington to Athlone.	—	39 8	Portarlington -	Athlone - -	—	—	—	Staff. 39 8					
Ballybrophy to Birdhill.	—	42 41	Ballybrophy -	Birdhill - -	—	—	—	Staff. 42 41					
Roscrea to Parsonstown.	—	11 73	Roscrea - -	Parsonstown -	—	—	—	Staff. 11 73					
Charleville Junction to Limerick.	—	25 10	Charleville Junction.	Patrickswell -	—	—	—	Staff. 17 50					
Mallow to Fermoy -	—	16 61	Mallow - -	Tralee - -	—	—	—	Staff. 62 20					
Mallow to Tralee -	—	62 20											
Banteer to Newmarket.	—	8 60	Banteer - -	Newmarket -	—	—	—	Staff. 8 60					
Headford Junction to Kenmare.	—	19 56	Headford Junction	Kenmare - -	—	—	—	Staff. 19 56					
Gortatlea to Castleisland.	—	4 29	Mallow - - -	Fermoy - -	—	—	—	Staff. 16 61					
Farranfore to Killorglin.	—	—	Farranfore	Killorglin - -	—	—	—	Tablet. 12 34					
Farranfore to Valentia Harbour.	—	39 26	Killorglin - -	Valentia Harbour	—	—	—	Tablet. 26 72					
Queenstown Junction to Youghal.	—	20 57	Queenstown Junction.	Youghal - -	—	—	—	Staff. 20 59					
	208 15	368 56			207 43	—	—	356 69					
Lines Worked:													
Fermoy to Mitchelstown.	—	11 35	Fermoy - -	Mitchelstown -	—	—	—	Staff. 11 35		- - -	- - -	—	
Clara Junction to Banagher.	—	17 30	Clara - -	Banagher - -	—	—	—	18 61					
	—	28 65			—	—	—	30 16					

* Extracted from the London and North-Western Railway Company's return.

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		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch	m. ch.	m. ch.	
		—	—	—	Strabane Junction	Stranorlar	13 18	—	—	—	—	
					Stranorlar (section 2).	Lough Eske	14 0					
					Lough Eske (section 2).	Donegal	4 0					
							31 18					
		—	—	—	Carlisle Pier		—	0 18	—	—	—	* Three line portion, length 1 mile 20 chains, being worked separately as a double, and single is so entered in this return.
					Palace East	Ballywilliam	3 40					† Also worked on Harpur's system.
							3 40	0 18				
		—	—	—			—	—	—	—	—	
		—	—	—	Bundoran Junction.	Bundoran	—	—	35 48	—	3 50	Belfast Central Railway.
					Fintona Junction	Fintona	0 53					
					Shantona Junction	Cootehill	7 45					
					Banbridge	Ballyroney	9 33					
					Ballyhaise	Belturbet	4 20					
					Inniskeen	Carrickmacross	6 55					
							28 46	—	35 48	—	3 50	
Telephonic communication exists between all signal-cabins on G.S. and W. Company's system and lines worked by the Company.					Gortatlea	Castleisland	—	—	4 29	—	0 55	Church Road Junction to Northwall.
					Patrickswell	Limerick	—	—	7 40‡			‡ By telegraph speaking instruments in addition.
							—	—	11 69			
		—	—	—			—	—	—	—	—	

Railway Company.	Total Length of the Company's Railway open *for Passenger Traffic*, and of all other Railways open *for Passenger Traffic* which are worked by them.		PORTIONS OF THE COMPANY'S RAILWAYS, OR (Where the System is not continuous, enter separately one under the other, under Worked by Telegraph - - - - - - -								
			On the Absolute Block System.						On the Permissive Block System.		
						Distance of Single Line.					
	Consisting of Two or more Lines of Rails.	Consisting of a Single Line of Rails only.	From	To	Distance of Double Line.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.	From	To	Distance of Double Line.
IRELAND—*continued.*											
LONDONDERRY AND LOUGH SWILLY.	m. ch. —	m. ch. 31 0	Londonderry -	Buncrana - -	m. ch. —	m. ch. 14 40	m. ch. —	m. ch. —	- - -	- - -	m. ch. —
			Troban Junction	Letterkenny -	—	16 40					
						31 0					
MIDLAND GREAT WESTERN OF IRELAND.	160 69	300 18	Broadstone -	Ballinasloe - -	91 53	—	—	—	- - -	- - -	—
			Ballinasloe -	Oranmore - -	—	—	—	29 53			
			Liffey Junction -	West Road Junc.	2 38						
			Oranmore - -	Galway - -	5 9						
			Attymon - -	Loughrea - -	—	—	—	9 0			
			Nesbit Junction -	Edenderry -	—	—	—	9 32			
			Streamstown -	Clara - -	—	—	—	7 33			
			Mullingar - -	Longford - -	26 13						
			Longford - -	Carrignagat Junc.	—	—	—	52 42			
			Carrignagat Junc.	Sligo - -	5 32						
			Kilfree Junction -	Ballaghaderreen -	—	—	—	9 36			
			Crossdoney Junc.	Killeshandra -	—	—	—	7 3			
			Athlone - -	Roscommon -	18 0						
			Inny Junction -	Cavan - -	—	—	—	24 65			
			Roscommon -	Westport Quay -	—	—	—	66 44			
			Claremorris -	Ballinrobe - -	—	—	—	12 40			
			Manulla Junction	Killala - -	—	—	—	28 32			
			Clonsilla Junc. -	Drumree - -	11 58						
			Drumree - -	Navan Junction -	—	—	—	11 59			
			Kilmessan - -	Athboy - -	—	—	—	12 12			
			Navan Junction -	Kingscourt - -	—	—	—	19 47			
			Navan Junction (G.N.).	Navan Junction (N. and K.).	0 26						
					160 69	—	—	300 18			
SLIGO, LEITRIM, AND NORTHERN COUNTIES.	—	42 60	Enniskillen - -	Carrignagat Junction.	—	42 60	—	—	- - -	- - -	—
TRALEE AND DINGLE.	—	37 40	- - -	- - -	—	—	—	—	- - -	- - -	—
WATERFORD AND CENTRAL IRELAND.	—	31 0	- - -	- - -	—	—	—	—	- - -	- - -	—
Kilkenny Junction.	—	28 32	- - -	- - -	—	—	—	—	- - -	- - -	—
Central Ireland -	—	6 63	- - -	- - -	—	—	—	—	- - -	- - -	—
		66 15									
WATERFORD AND LIMERICK.	31 60	252 20	Waterford -	Fiddown - -	10 0	—	—	—	- - -	- - -	—
			Fiddown - -	Tipperary - -	—	—	—	42 40			
			Newcastle -	Tralee - -	—	43 0					
			Tralee - -	Fenit - -	—	8 0					
			Clonmel -	Thurles - -	—	25 40					
					10 0	76 40	—	42 40			
WATERFORD AND TRAMORE.	—	7 20	- - -	- - -	—	—	—	—	- - -	- - -	—
WATERFORD, DUNGARVAN, AND LISMORE.	—	42 71	Waterford -	Lismore - -	—	42 71	—	—	- - -	- - -	—
	—	15 24	Fermoy - -	Lismore - -	—	—	—	15 24	- - -	- - -	—
		58 15									
WEST CARBERY -	—	14 75	- - -	- - -	—	—	—	—	- - -	- - -	—
WEST CLARE AND SOUTH CLARE.	—	43 19	Miltown - -	Moyasta - -	—	16 19	—	—	- - -	- - -	—

OF OTHER RAILWAYS WORKED BY THEM.
the Head applicable, each Main Line or Portion of Main Line or Branch Line so worked.)

Worked by Telegraph.					Single Lines of Railway (not included in the foregoing Columns), (1.) Worked under the System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon the Single Line or portions thereof at one and the same time; or (2.) Worked under the Train Porter System; or (3.) Worked under the Train Staff System.					Length of the Portions of Company's Railway and of other Railways worked by them or *Goods and Mineral Traffic only.*	Remarks.
Not on either of the foregoing Systems.											
From	To	Distance of Double Line.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	From	To	Distance of System as above. (1.)	Distance of Porter System. (2.)	Distance of Train Staff System. (3.) With Tickets.	Distance of Train Staff System. (3.) Without Ticket.	
		m. ch.	m. ch.	m. ch.			m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	
—	—	—	—	—	Sligo —	Sligo Quay	—	—	—	—	0 60	
					Galway Dock —	—	—	—	—	—	0 16	
							—	—	—	—	0 76	
—	—	—	—	—	—	—	—	—	—	—	—	
—	—	—	—	—	Tralee —	Castlegregory Jn.	—	—	—	10 0	—	
					Castlegregory Jn.	Annascaul —	—	—	—	10 40		
					Annascaul —	Dingle —	—	—	—	11 0		
					Castlegregory Jn.	Castlegregory —	—	—	—	6 0		
										37 40		
—	—	—	—	—	Waterford —	Kilkenny —	—	—	31 0	—	—	
—	—	—	—	—	Kilkenny —	Maryborough —	—	—	28 32			
—	—	—	—	—	Maryborough —	Mountmellick —	—	—	—	6 63		
									59 32	6 63		
Limerick	Limerick Junction.	21 60	—	—	Tipperary —	Limerick Junction	—	—	3 0	—	—	
					Limerick —	Foynes —	—	—	26 20			
					Limerick —	Ennis —	—	—	24 60			
					Limerick —	Killaloe —	—	—	17 20			
					Ballingrane Junction.	Newcastle —	—	—	10 0			
					Ennis —	Athenry —	—	—	36 0			
					Athenry —	Tuam —	—	—	16 0			
									133 20			
—	—	—	—	—	Waterford —	Tramore —	7 20	—	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	—	Telephones between cabins.
	—	—	—	—	—	—	—	—	—	—	—	
—	—	—	—	—	Schull —	Skibbereen	—	—	14 75	—	—	
	—	—	—	—	Ennis —	Miltown Malbay	27 0	—	—	—	—	

SUMMARY.

Name of Railway Company.	Total Length of Railway open for Passenger Traffic.		Distance worked by Telegraph.					Distance worked by Telegraph, but not on either of the foregoing Systems.			Distance of Single Lines (not included in the foregoing Columns) worked under the following Systems.			
			Absolute Block.				Permissive Block. Double.		Distance of Single Line.		System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon Line or Portions thereof at one and the same Time. (No. 1.)	Train Porter System. (No. 2.)	Train Staff System. (No. 3.)	
	Double.	Single.	Double.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	Distance of Single Line. Worked on Electrical Train Staff or Tablet System.		Double.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.			*With* Tickets.	*Without* Ticket.
ENGLAND AND WALES.														
	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.
Barry Dock and Railways	5 72	—	5 72	—	—	—	—	—	—	—	—	—	—	—
Bishop's Castle	—	9 54	—	—	—	—	—	—	—	—	9 54	—	—	—
Brecon and Merthyr Tydfil Junction.	12 74	45 77	12 74	—	—	45 77	—	—	—	—	—	—	—	—
Cambrian	8 56	216 72	8 56	18 14	—	194 48	—	—	—	—	3 55	0 35	—	—
Charnwood Forest	—	10 0	—	10 0	—	—	—	—	—	—	—	—	—	—
Cheshire Lines Committee	118 16	10 1	118 16	10 1	—	—	—	—	—	—	—	—	—	—
Cleator and Workington Junction.	11 15	6 30	11 15	—	—	6 30	—	—	—	—	—	—	—	—
Cockermouth, Keswick, and Penrith.	—	31 14	—	14 54	—	16 40	—	—	—	—	—	—	—	—
Colne Valley and Halstead	—	19 0	—	—	—	—	—	—	—	—	—	—	19 0	—
Corris	—	6 40	—	—	—	—	—	—	—	—	6 40	—	—	—
Dover and Deal	8 28	—	8 28	—	—	—	—	—	—	—	—	—	—	—
East and West Junction	—	51 0	—	51 0	—	—	—	—	—	—	—	—	—	—
Festiniog	—	13 20	—	13 20	—	—	—	—	—	—	—	—	—	—
Furness	72 45	34 78	72 32	18 20	—	16 35	—	0 13	—	0 23	—	—	—	—
Garstang and Knot End	—	7 0	—	—	—	—	—	—	—	—	7 0	—	—	—
Golden Valley	—	19 0	—	—	—	—	—	—	—	—	—	—	—	19 0
Great Eastern	537 39	496 13	537 39	405 17	—	68 52	—	—	—	—	21 40	0 30	0 34	—
Great Northern	600 60	174 1	600 54	144 19	—	—	—	0 6	22 54	—	—	—	7 8	—
Great Northern and Great Eastern Joint.	111 76	4 55	111 76	4 55	—	—	—	—	—	—	—	—	—	—
Great Northern and London and North-western.	22 75	—	22 75	—	—	—	—	—	—	—	—	—	—	—
Great Western	1,104 32	1,141 33	1104 32	625 65	2 40	417 33	—	—	—	—	95 55	—	—	—
Hammersmith and City	2 77	—	2 77	—	—	—	—	—	—	—	—	—	—	—
Hull, Barnsley, and West Riding Junction.	55 60	—	55 60	—	—	—	—	—	—	—	—	—	—	—
Isle of Wight	1 0	13 8	1 0	—	—	10 27	—	—	—	—	—	—	—	2 61
Isle of Wight Central	—	33 60	—	33 60	—	—	—	—	—	—	—	—	—	—
Lancashire and Yorkshire	456 30	16 19	456 30	9 25	—	—	—	—	—	—	—	—	6 74	—
Lancashire and Yorkshire and London and North-western Joint Lines.	56 2	7 74	56 2	—	—	—	—	—	—	—	—	—	7 74	—
Liskeard and Caradon	—	6 74	—	—	—	—	—	—	—	—	6 74	—	—	—
London and North-western	1,441 7	306 22	1441 7	157 58	14 20	123 53	—	—	—	—	4 75	—	—	5 56
London and North-western and Great Western Joint.	112 73	44 64	112 73	9 22	—	34 78	—	—	—	—	—	—	—	0 44
London and North-western and Midland Joint.	19 45	5 45	19 45	—	—	5 45	—	—	—	—	—	—	—	—
London and South-western	642 75	223 31	642 75	135 10	22 1	66 20	—	—	—	—	—	—	—	—
London, Brighton, and South Coast.	340 0	121 20	340 0	121 20	—	—	—	—	—	—	—	—	—	—
London, Chatham, and Dover	180 12	10 22	180 12	10 5	0 17	—	—	—	—	—	—	—	—	—
Londonderry	4 40	—	4 40	—	—	—	—	—	—	—	—	—	—	—
London, Tilbury, and Southend.	64 31	13 69	64 15	—	—	10 2	—	0 16	3 67	—	—	—	—	—
Macclesfield Committee	10 70	—	10 70	—	—	—	—	—	—	—	—	—	—	—
Manchester and Milford	—	41 0	—	41 0	—	—	—	—	—	—	—	—	—	—

SUMMARY—*continued.*

NAME OF RAILWAY COMPANY.	Total Length of Railway open for Passenger Traffic.		Distance worked by Telegraph.					Distance worked by Telegraph, but not on either of the foregoing Systems.			Distance of Single Lines (not included in the foregoing Columns worked under the following Systems.			
			Absolute Block.				Permissive Block. Double.				System in which only One Engine in Steam or Two or more Engines coupled together are allowed to be upon Line or Portions thereof at one and the same Time. (No. 1.)	Train Porter System. (No. 2.)	Train Staff System. (No. 3.)	
				Distance of Single Line.					Distance of Single Line.					
	Double.	Single.	Double.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.	Worked on Electrical Train Staff or Tablet System.		Double.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.			*With* Tickets.	*Without* Ticket.
ENGLAND AND WALES—*continued.*														
MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE.	m. ch. 321 58¼	m. ch. 3 12	m. ch. 318 16	m. ch. —	m. ch. —	m. ch. —	m. ch. 1 37½	m. ch. 2 4¾	m. ch. —	m. ch. —	m. ch. —	m. ch. —	m. ch. —	m. ch. 3 12
MANCHESTER SOUTH JUNCTION AND ALTRINCHAM.	9 20	—	9 20	—	—	—	—	—	—	—	—	—	—	—
MARYPORT AND CARLISLE	27 73	13 15	27 73	—	—	10 13	—	—	—	—	3 2	—	—	—
MAWDDWY	—	6 60	—	—	—	—	—	—	—	—	6 60	—	—	—
MERSEY	4 24	—	4 24	—	—	—	—	—	—	—	—	—	—	—
METROPOLITAN	47 46	16 34	47 46	—	—	4 1	—	—	—	—	12 33	—	—	—
METROPOLITAN DISTRICT AND METROPOLITAN AND DISTRICT JOINT.	19 72¾	1 43½	19 72¾	1 43½	—	—	—	—	—	—	—	—	—	—
MIDLAND	1,014 79	270 38	1,012 14	105 21	0 59	121 12	—	2 65	2 42	—	—	—	—	40 64
MIDLAND AND GREAT NORTHERN (EASTERN SECTION).	6 44	102 69	6 44	16 59	—	86 10	—	—	—	—	—	—	—	—
MIDLAND AND NORTH-EASTERN	25 52	—	25 52	—	—	—	—	—	—	—	—	—	—	—
MIDLAND AND SOUTH-WESTERN JUNCTION.	1 29	54 61	1 29	16 19	—	38 42	—	—	—	—	—	—	—	—
NEATH AND BRECON	0 37	39 61	0 37	1 0	—	38 61	—	—	—	—	—	—	—	—
NORTHAMPTON AND BANBURY JUNCTION.	—	15 6	—	5 14	—	—	—	—	—	—	—	—	9 72	—
NORTH AND SOUTH-WESTERN JUNCTION.	3 14	1 46	3 14	1 23	0 23	—	—	—	—	—	—	—	—	—
NORTH-EASTERN	986 14	436 57	979 35	422 73	0 17	—	—	6 59	0 20	—	13 27	—	—	—
NORTH LONDON	11 57	—	11 57	—	—	—	—	—	—	—	—	—	—	—
NORTH STAFFORDSHIRE	152 33	22 35	151 27	11 26	—	9 69	0 36	0 50	—	—	—	—	—	1 20
NORTH WALES (NARROW GAUGE)	—	11 70	—	9 35	—	—	—	—	—	—	—	—	—	2 35
OLDHAM, ASHTON-UNDER-LYNE, AND GUIDE BRIDGE JUNCTION.	5 61	—	5 25	—	—	—	0 36	—	—	—	—	—	—	—
PEMBROKE AND TENBY	—	27 24	—	—	—	27 24	—	—	—	—	—	—	—	—
PONTYPRIDD, CAERPHILLY, AND NEWPORT.	5 11	—	5 11	—	—	—	—	—	—	—	—	—	—	—
RAVENGLASS AND ESKDALE	—	7 11	—	—	—	—	—	—	—	—	7 11	—	—	—
RHONDDA AND SWANSEA BAY	2 45	12 26	2 45	1 65	—	10 41	—	—	—	—	—	—	—	—
RHYMNEY	33 11	5 58	33 11	—	2 22	3 36	—	—	—	—	—	—	—	—
RHYMNEY AND GREAT WESTERN JOINT.	9 19	—	9 19	—	—	—	—	—	—	—	—	—	—	—
SEVERN AND WYE AND SEVERN BRIDGE.	2 79	19 15	2 19	10 29	—	8 11	0 60	—	—	—	0 55	—	—	—
SHEFFIELD AND MIDLAND COMMITTEE.	10 72	—	10 72	—	—	—	—	—	—	—	—	—	—	—
SOUTH-EASTERN	363 70	53 26	363 70	41 66	—	11 35	—	—	—	—	0 5	—	—	—
SOUTH-WESTERN AND MIDLAND	27 71	76 4	27 71	7 5	—	68 79	—	—	—	—	—	—	—	—
SOUTHWOLD	—	9 0	—	—	—	—	—	—	—	—	—	—	—	9 0
SWANSEA AND MUMBLES	—	5 10	—	—	—	—	—	—	—	—	—	—	5 10	—
TAFF VALE	59 50	20 52	59 50	14 47	—	—	—	—	—	—	6 5	—	—	—
TALYLLYN	—	6 50	—	—	—	—	—	—	—	—	6 50	—	—	—
WEST LANCASHIRE	23 64	—	23 64	—	—	—	—	—	—	—	—	—	—	—
WEST LONDON EXTENSION	5 8	—	5 8	—	—	—	—	—	—	—	—	—	—	—
WEST SOMERSET MINERAL	—	6 0	—	—	—	—	—	—	—	—	6 0	—	—	—
WIRRAL	4 16	6 6	4 16	6 6	—	—	—	—	—	—	—	—	—	—
WREXHAM, MOLD, AND CONNAH'S QUAY.	13 13	4 44	13 13	4 44	—	—	—	—	—	—	—	—	—	—
TOTAL ENGLAND AND WALES	9,204 33	4,384 56½	9,188 50	2,510 0½	42 39	1,455 14	3 9½	12 53¾	29 23	0 23	218 1	0 65	56 32	84 52

SUMMARY—*continued.*

NAME OF RAILWAY COMPANY.	Total Length of Railway open for Passenger Traffic.		Distance worked by Telegraph.					Distance worked by Telegraph, but not on either of the foregoing Systems.			Distance of Single Lines (not included in the foregoing Columns) worked under the following Systems.			
			Absolute Block.				Permissive Block. Double.		Distance of Single Line.		System in which only One Engine in Steam or Twoor more Engines coupled together are allowed to be upon Line or Portions thereof at one and the same Time. (No. 1.)	Train Porter System. (No. 2.)	Train Staff System. (No. 3.)	
	Double.	Single.	Double.	Distance of Single Line. Worked by the Train Staff System in addition.	Distance of Single Line. Worked *without* the Train Staff System.	Distance of Single Line. Worked on Electrical Train Staff or Tablet System.		Double.	Worked by the Train Staff System in addition.	Worked *without* the Train Staff System.			*With* Tickets.	*Without* Ticket.
SCOTLAND.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.	m. ch.
CALEDONIAN	460 66	312 23	460 66	31 29	0 39	269 23	—	—	—	—	—	—	—	11 12
CITY OF GLASGOW UNION	4 57	—	4 57	—	—	—	—	—	—	—	—	—	—	—
DUNDEE AND ARBROATH JOINT	17 7	—	16 33	—	—	—	—	0 54	—	—	—	—	—	—
GLASGOW AND KILMARNOCK JOINT.	26 28	2 19	26 28	—	—	2 19	—	—	—	—	—	—	—	—
GLASGOW AND PAISLEY JOINT	7 52	—	7 52	—	—	—	—	—	—	—	—	—	—	—
GLASGOW AND SOUTH-WESTERN	241 79	93 52	240 63	28 1	—	65 51	—	—	—	—	—	—	—	—
GREAT NORTH OF SCOTLAND	35 13	277 79	35 13	—	239 71	32 27	—	—	—	—	5 61	—	—	—
HIGHLAND	6 65	422 42	6 65	—	—	1 38	—	—	—	—	421 4	—	—	—
NORTH BRITISH	470 5	464 73	470 5	118 37	19 27	224 74	—	—	—	—	—	1 10	94 14	6 71
PORTPATRICK AND WIGTOWNSHIRE	—	81 79	—	19 21	—	54 29	—	—	—	—	—	—	—	8 29
TOTAL, SCOTLAND	1,270 52	1,655 47	1,268 62	197 8	259 57	650 21	—	0 54	—	—	426 65	1 10	94 14	26 32
IRELAND.														
BALLINASCARTHY, &c.	—	9 0	—	—	—	—	—	—	—	—	9 0	—	—	—
BALLYCASTLE	—	16 10	—	16 10	—	—	—	—	—	—	—	—	—	—
BELFAST AND COUNTY DOWN	12 40	63 40	12 40	53 10	0 70	9 40	—	—	—	—	—	—	—	—
BELFAST AND NORTHERN COUNTIES.	33 20	212 18	33 20	116 50	—	84 23	—	—	—	—	10 25	—	—	1 0
CASTLEDERG AND VICTORIA BRIDGE.	—	7 0	—	—	—	—	—	—	—	—	7 0	—	—	—
CAVAN, LEITRIM, AND ROSCOMMON	—	48 39	—	45 78	—	—	—	—	—	—	2 41	—	—	—
CLOGHER VALLEY	—	37 0	—	—	—	—	—	—	—	—	—	—	37 0	—
CORK AND MACROOM DIRECT	—	24 40	—	—	—	—	—	—	—	—	—	—	24 40	—
CORK AND MUSKERRY	—	26 40	—	—	—	—	—	—	—	—	26 40	—	—	—
CORK, BANDON, AND SOUTH COAST	—	93 60	—	9 0	—	84 60	—	—	—	—	—	—	—	—
CORK, BLACKROCK, AND PASSAGE.	—	6 37	—	6 37	—	—	—	—	—	—	—	—	—	—
DONEGAL	—	50 18	—	—	—	19 0	—	—	—	—	31 18	—	—	—
DUBLIN, WICKLOW, AND WEXFORD.	29 20	115 78	29 20	11 20	—	101 0	—	—	—	—	3 40	0 18	—	—
DUNDALK, NEWRY, AND GREENORE	—	26 77	—	26 77	—	—	—	—	—	—	—	—	—	—
GREAT NORTHERN OF IRELAND	137 16	382 21	137 16	13 54	—	304 33	—	—	—	—	28 46	—	35 48	—
GREAT SOUTHERN AND WESTERN OF IRELAND.	208 15	397 41	207 43	—	—	387 5	—	—	—	—	—	—	11 69	—
LONDONDERRY AND LOUGH SWILLY.	—	31 0	—	31 0	—	—	—	—	—	—	—	—	—	—
MIDLAND GREAT WESTERN	160 69	300 18	160 69	—	—	300 18	—	—	—	—	—	—	—	—
SLIGO, LEITRIM, AND NORTHERN COUNTIES.	—	42 60	—	42 60	—	—	—	—	—	—	—	—	—	—
TRALEE AND DINGLE	—	37 40	—	—	—	—	—	—	—	—	—	—	—	37 40
WATERFORD AND CENTRAL IRELAND.	—	66 15	—	—	—	—	—	—	—	—	—	—	59 32	6 63
WATERFORD AND LIMERICK	31 60	252 20	10 0	76 40	—	42 40	—	21 60	—	—	—	—	133 20	—
WATERFORD AND TRAMORE	—	7 20	—	—	—	—	—	—	—	—	7 20	—	—	—
WATERFORD, DUNGARVAN, AND LISMORE.	—	58 15	—	42 71	—	15 24	—	—	—	—	—	—	—	—
WEST CARBERY	—	14 75	—	—	—	—	—	—	—	—	—	—	14 75	—
WEST CLARE	—	43 19	—	16 19	—	—	—	—	—	—	27 0	—	—	—
TOTAL, IRELAND	613 0	2,371 1	590 48	508 46	0 70	1,348 3	—	21 60	—	—	152 70	0 18	316 44	45 23
TOTAL, UNITED KINGDOM	11,088 5	8,423 57½	11047 49½	3,215 54½	303 6	3,453 38	3 9½	35 7¾	29 23	0 23	797 56	2 13	467 10	156 27

COMPARATIVE STATEMENT showing the Number of Miles of Double Line open for Passenger Traffic, and the Distance thereof worked on the ABSOLUTE BLOCK SYSTEM, in the Years 1892 and 1893 respectively, on the following Railways :—

NAME OF COMPANY.	1892.		1893.		Per-centage of Double Line worked on Absolute Block System.		Per-centage Increase in 1893 over 1892.
	Length of Double Line open.	Distance worked on Absolute Block System.	Length of Double Line open.	Distance worked on Absolute Block System.	1892.	1893.	
ENGLAND AND WALES:	miles.	miles.	miles.	miles.	per cent.	per cent.	per cent.
BARRY	6	6	6	6			
BRECON AND MERTHYR	14	14	13	13			
CAMBRIAN	9	9	9	9			
CHESHIRE LINES	118	118	118	118			
CLEATOR AND WORKINGTON JUNCTION	11	11	11	11			
DOVER AND DEAL	8	8	8	8			
FURNESS	72½	72½	72½	72½			
GREAT EASTERN	537	537	537½	537½			
GREAT NORTHERN	586	586	601	601			
GREAT NORTHERN AND GREAT EASTERN	112	112	112	112			
GREAT NORTHERN AND LONDON AND NORTH-WESTERN.	23	23	23	23			
GREAT WESTERN	1,079	1,079	1,104½	1,104½			
HAMMERSMITH AND CITY	3	3	3	3			
HULL, BARNSLEY, AND WEST RIDING JUNCTION	56	56	56	56			
ISLE OF WIGHT	1	1	1	1			
LANCASHIRE AND YORKSHIRE	456	456	456	456			
LANCASHIRE AND YORKSHIRE AND LONDON AND NORTH-WESTERN JOINT LINES.	56	56	56	56			
LONDON AND NORTH-WESTERN	1,437	1,437	1,441	1,441			
LONDON AND NORTH-WESTERN AND GREAT WESTERN JOINT.	112	112	113	113	Cent.	Cent.	—
LONDON AND NORTH-WESTERN AND MIDLAND JOINT.	20	20	20	20			
LONDON AND SOUTH-WESTERN	637½	637½	643	643			
LONDON, BRIGHTON, AND SOUTH COAST	340	340	340	340			
LONDON, CHATHAM, AND DOVER	180	180	180	180			
LONDONDERRY	—	—	4½	4½			
LONDON, TILBURY, AND SOUTHEND	64	64	64	64			
MACCLESFIELD COMMITTEE	11	11	11	11			
MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE	297	295	322	318	100	99	
MANCHESTER SOUTH JUNCTION AND ALTRINCHAM	9	9	9	9			
MARYPORT AND CARLISLE	28	28	28	28			
MERSEY	3	3	4	4			
METROPOLITAN	47	47	47½	47½			
METROPOLITAN DISTRICT	20	20	20	20			
MIDLAND	1,052	1,049	1,015	1,012			
MIDLAND AND GREAT NORTHERN (EASTERN SECTION).	6½	6½	6½	6½			
MIDLAND AND NORTH-EASTERN	26	26	26	26			
NORTH AND SOUTH-WESTERN JUNCTION	3	3	3	3			
NORTH-EASTERN	981	977	986	979	100	99	

Name of Company.	1892.		1893.		Per-centage of Double Line worked on Absolute Block System.		Per-centage Increase in 1893 over 1892.
	Length of Double Line open.	Distance worked on Absolute Block System.	Length of Double Line open.	Distance worked on Absolute Block System.	1892.	1893.	
ENGLAND AND WALES—*continued.*	miles.	miles.	miles.	miles.	per cent.	per cent.	per cent.
North London	12	12	12	12	99	100	—
North Staffordshire	150	149	152	151	99	99	—
Oldham, Ashton, and Guide Bridge Junction	6	6	6	6			
Pontypridd, Caerphilly, and Newport	5	5	5	5			
Rhondda and Swansea Bay	2½	2½	2½	2½	Cent.	Cent.	—
Rhymney	33	33	33	33			
Rhymney and Great Western Joint	9	9	9	9			
Severn and Wye and Severn Bridge	3	2	3	2	67	67	—
Sheffield and Midland Committee	11	11	11	11			
South-eastern	363	363	364	364	Cent.	Cent.	—
Somerset and Dorset Joint	28	28	28	28			
Taff Vale	59	13	59½	59½	22	100	78
West Lancashire	24	24	24	24			
West London Extension	5	5	5	5	Cent.	Cent.	—
Wirral	4	4	4	4			
Wrexham, Mold, and Connah's Quay	13	13	13	13			
Total, England and Wales	9,167	9,103	9,204	9,188	99·5	99·8	—
SCOTLAND:							
Caledonian	461	461	461	461	Cent.	Cent.	—
City of Glasgow Union	5	5	5	5			
Dundee and Arbroath	17	16	17	16	94	94	—
Glasgow and Kilmarnock	26	26	26	26	Cent.	Cent.	—
Glasgow and Paisley	8	8	8	8			
Glasgow and South-western	239	238	242	241	99	99	—
Great North of Scotland	35	35	35	35			
Highland	7	7	7	7	Cent.	Cent.	—
North British	469	469	470	470			
Total, Scotland	1,267	1,265	1,271	1,269	100	100	—
IRELAND:							
Belfast and County Down	7	7	12½	12½			
Belfast and Northern Counties	33	33	33	33			
Dublin, Wicklow, and Wexford	29	29	29	29			
Great Northern (Ireland)	137	137	137	137	Cent.	Cent.	—
Great Southern and Western	208	208	208	208			
Midland Great Western	161	161	161	161			
Waterford and Limerick	32	10	32	10	31	31	Nil.
Total, Ireland	609	585	613	591	96	96	—
Total, United Kingdom	11,043	10,953	11,088	11,048	99·2	99·6	—

APPENDICES.

APPENDIX No. 1.

LANCASHIRE AND YORKSHIRE RAILWAY.

EXCEPTIONS or MODIFICATIONS with respect to the BLOCK SYSTEM.

Station.	Portions of Line.	Distance. Miles	Chains.
Wakefield	Between the home signal for Goole Junction box and the starting signal for the station west box, up and down lines	0	20
Bradford	From down home signal cabins A and B to the station buffers	0	18
Brighouse	Between the west signal box and the up starting signal, under special instructions for trains forming connexion	0	13
Holmfirth	From the station box to the buffers	0	12½
Clayton West	From the station box to the buffers	0	11
Dewsbury	From the station box to the buffers	0	7
Rishworth	From the station box to the buffers	0	12I
Stainland	From the station box to the buffers	0	12
Todmorden	Between Todmorden Junction box and the station west box, under special instructions for trains forming connexion	0	29
Royton	From the station signal box to the station buffers	0	13
Middleton	From the down home signal to the station buffers	0	18
Stalybridge	From the goods yard cabin to the station buffers	0	16
Bacup	From the station signal box down home signal to the buffers on both lines	0	16
Manchester	Between Irwell Bridge up home signal to East Junction down starting signal and between East Junction up home signal and Irwell Bridge down starting signal, through the platform roads. Absolute block on the main lines for passenger trains	0	28
Salford (Manchester)	Between the up passenger loop line, Oldfield Road Junction, and the station east box, under special instructions so far as the loop is concerned	0	37½
Bolton	From Salford line to Blackburn Junction on the down line, and from Bury Junction to Blackburn Junction on the up line	0	32¾
Wigan	Between the goods yard signal box and Southport Junction signal box, up and down passenger lines, under special instructions for trains forming connexion	0	20¼
Liverpool	From cabin A down home signal to the station buffers	0	16¼
Southport	From cabin A to the station buffers	0	9¼
Preston Junction	Between Brownedge Crossing signal box and Preston Junction signal box, in the down loop line, and under special instructions for excursion trains collecting tickets	0	32¾
Blackburn	Between the east and west signal boxes up and down lines	0	23½
Horwich	From the station signal box to the buffers	0	17
	Lockwood Junction to Meltham	3	43¼
	Totlington to a junction with the East Lancashire line, near Bury	3	30¾
Barnsley	Between Jumble Lane Home Signal and Lancashire and Yorkshire Junction Home Signal.	0	15½

LANCASHIRE AND YORKSHIRE AND LONDON AND NORTH-WESTERN RAILWAYS.

SCHEDULE.

EXCEPTIONS or MODIFICATIONS with respect to the BLOCK SYSTEM (Joint Lines).

Station.	Portions of Line.	Distance.
		Chains.
Blackpool (Talbot Road).	From down home signal to station buffers	13
Blackpool (Central)	From down home signal to station buffers	23½
Fleetwood	From down home signal to station buffers	19½
Kirkham	From up home signal to up starting signal	—
	From down home signal to down starting signal	34
Poulton	From up home signals to up home signals	—
	From Poulton junction box to Poulton goods yard box	—
	From down home signal to down starting signal	—
	From Poulton goods yard signal box to Poulton junction box	44
Preston	From No. 1 signal box to No. 4 signal box on the up and down lines	30

LANCASHIRE AND YORKSHIRE RAILWAY.

The Secretary states that during the past year two position block instruments have been substituted by three position pattern between Heaton Lodge Junction and Dewsbury L. and N.W. Junction on both lines of way, also between Cleckheaton Junction and Mirfield Cabin B.

Also that 29 sets of Electrical Repeaters have been fixed to repeat the action of signal-arms at various places on the line, and that 32 additional Telephones have been fixed during the past year to facilitate the working of the traffic.

For SECTIONS of LINE on which the MIDLAND RAILWAY COMPANY is exempted from establishing the ABSOLUTE TELEGRAPH SYSTEM, and for SECTIONS of LINE on which BLOCK TELEGRAPH WORKING is established, but in order to admit of Trains being connected or separated more than one Train is allowed in the Section at one time, *see* pages 52 and 54.

APPENDIX No. 2.

STATEMENTS received from RAILWAY COMPANIES in reply to a request from the BOARD of TRADE for information as to the PROGRESS which has been made during the year 1893 in BLOCK WORKING and SIGNAL ARRANGEMENTS, distinguishing the WORK PERFORMED on lines which have been opened for Passenger Traffic during the past year from that EXECUTED on lines which were open for traffic on the 1st January 1893, and the EXTENT of the WORK of the same kind which it is intended to undertake during the year 1894.

BRECON AND MERTHYR RAILWAY.

STATEMENT of the PROGRESS made by this COMPANY during the year 1893 in BLOCK WORKING and SIGNAL ARRANGEMENTS.

WORK performed on lines which were open for PASSENGER TRAFFIC on 1st January 1893.

Block Working.

24 miles 75 chains of line, with Electrical Train Tablet System, brought into operation.

4 miles 61 chains of line, with Electrical Train Staff System, brought into operation.

Signal Arrangements.—

The signalling and interlocking of three stations and four junctions have been carried out, and 15 intermediate sidings have been locked on the Electrical Train Tablet System.

Work to be carried out during the Year 1894.

Completion of signalling arrangements now in hand at Dowlais.

GREAT WESTERN RAILWAY.

STATEMENT of the PROGRESS which has been made by this COMPANY during the year 1893 in BLOCK WORKING and SIGNAL ARRANGEMENTS.

Block Working.

The Absolute Block System is in operation on all the lines and branches as required by the Board of Trade.

The Electric Train Staff System has been provided upon the new branch line to Kingsbridge, which was opened for passenger traffic in December 1893.

	Miles.	Chains.
Brent to Kingsbridge - - -	12	44

Signal Arrangements.

The following stations, which have been opened for passenger traffic during the year 1893, have been locked:—

Gara Bridge, Avonwick, Loddiswell, Kingsbridge, and Cardiff (Riverside Temporary Station).

At the following stations and places interlocking works have been carried out during the year 1893.—

Rock Vein Sidings.	Handsworth Junction.	Stoke Works.
Teigngrace.	Madeley Court.	Pencader Station.
Soho.	Westwood Sidings.	Brick Works Sidings.
Devonport.	Malvern Link Gas Siding.	Chemical Sidings.

Tram Inn.	Cullompton.	Peplow.
Grampound Road.	Ruscombe Sidings.	Portishead Junction.
Quarry Sidings.	Waltham Sidings.	Starcross.
Market Drayton.	Marine Sidings.	Brent Knoll.
Dainton Tunnel.	Branches Fork Junction.	Aylesbury.
Rhymney Junction.	Horsehay.	Flax Bourton.
Stow on the Wold.	Goring.	Glanamman.
Much Wenlock.	Cholsey and Moulsford.	Pontamman.
Wolverhampton.	Llanelly.	Ammanford.
Pencader Junction.	Crudgington.	Cwmavon and Viponds.
Margam Moors.	Presthope.	Loughor.
Witney Station and Goods Junction.	Melksham.	Eardington.
Paddington Engine Siding.	Ebbw Vale Station and Sidings.	Linley.
Subway Junction.	Penzance.	Jackfield Sidings.
St. Austell.	Heathfield.	Moreton Cutting.
Lawley Bank.	Keyham Junction.	Eynsham.
Crelake Siding.	Tilehurst.	South Leigh.
Bristol Joint Station.	Twyford.	Goonbarrow Junction.
Kidderminster.	Leigh Court.	Hay Tor Siding.
Par Station.	Knightwick.	Alvescot.
Cleobury Mortimer.	Teignbridge Siding.	Lechlade.
Ketley.	Reading West Junction.	Garnant.
Tredegar Junction.	Canton Sidings.	Aller Siding.
Bird in Hand Sidings.	Gowerton East Box.	Bradley Siding.
Bedminster.	Kingswear.	South Wales and C. Chase Siding.
British Rhondda Colliery Siding.	Dimbath Siding.	Brent.
Upper Pontnewydd.	Weymouth Shunting Spur.	Cornwood.
Marazion.	St. Philip's Marsh.	Toller.
Ponsandane.	Bovey Pottery Siding.	Powerstock.
Highbridge.	Torre.	Moretonhampstead.
Sarsden Siding.	Barton Junction.	Kingsbridge Road.
Trevethin Junction.	Tonning Sidings.	Ivybridge Station.
Abersychan.	Hemerdon Sidings.	Plympton.
Ealing Ballast Siding.	Pangbourne.	Liskeard.
Port Tennant Junction.	Torquay Gas Siding.	Doublebois.
Bridgwater.	Wellington.	Bodmin Road.
Bampton (Oxon).	Fairford.	Par Harbour Siding.

The under-mentioned stations and places are being or have been ordered to be locked:—

Shepton Mallet.	Mwyndy.	Oswestry.
Blaenavon.	Pontypool Road Junctions.	Usk.
Ironbridge and Broseley.	Quakers Yard.	Salisbury.
Cressage.	Dyllas Siding.	Teignmouth.
Berrington.	Chard.	Brixham.
Redruth Station and Junction.	Cheltenham.	Bickleigh.
Ashburton Junction.	Pontypool (Crane Street).	Mary Tavy.
Totnes.	Stoneycombe Siding.	Coryton.
Wheal Busy Siding.	Hempstone Quarry Siding.	Lustleigh.
Llandyssil.	Scorrier.	Burngullow.
Watlington.	Yelverton.	Carn Brea Yard.
Uffington.	Lifton.	North Crofty Junction.
Swindon.	Launceston.	Dolcoath Siding.
Foregate Street.	Tavistock.	Roskear Siding.
Chepstow.	Perranwell.	Camborne.
East Usk Junction.	Penryn.	
Panteg (Lower).	Falmouth.	

When the foregoing works have been carried out, it is proposed to proceed with the locking works at the under-mentioned stations and places, viz.:—

Acrefair.	Carrog.	Llanderfel.
Wrights' Siding.	Corwen.	Nantyglo.
Llangollen Goods Junction.	Cynwyd.	Coalport.
Pentrefelin Siding.	Llandrillo.	Plymouth (Mill Bay).

Paddington Station, 16th February 1894.

Hy. Lambert,
General Manager.

LONDON AND NORTH-WESTERN RAILWAY.

RETURN showing the MILEAGE of LINES and PORTIONS of LINES upon which the ABSOLUTE BLOCK SYSTEM has been brought into operation during the Year 1893.

Total additional Mileage worked upon Absolute Block System on 31st Dec. 1893.				Name of Railway or Branch.	Portion of aforesaid Railway or Branch on which Absolute Block System has been introduced during 1893.		Distance of Double Line.	Distance of Single Line.	System or Systems in Operation during 1893.
Double.		Single.							
Miles.	Chains.	Miles.	Chains.		From	To	m. ch.	m. ch.	
4	69	—	—	Stalybridge Junction	Ashton Junction.	Stalybridge -	1 49	—	New railway opened in 1893.
—	—	—	—	Swansea - -	Pontardulais -	Gorseinon -	3 20	—	Formerly a single line.
					Total additional mileage brought under absolute block system in 1893 -		4 69	—	
					Note.—The mileage brought under the absolute block system in 1892 was - - -		8 69	4 22	

RETURN in pursuance of the Railway Regulation Act, 1873, by the LONDON AND NORTH-WESTERN RAILWAY COMPANY, relative to CONNECTIONS and CROSSINGS upon their Line of Railway and the Lines of Railway worked by them on the 31st December 1893.

Additional Connections in consequence of New Lines and Widenings opened in 1893:—

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by:				Number of Cases in which the usual requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects:						Remarks.
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.		
					Have.	Have not.	Have.	Have not.	Have.	Have not.	
Manchester Ship Canal deviations:—	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*	
Thelwall to Wilderspool Crossing.	—	—	—	—	—	—	—	—	—	—	2 siding connections less.
Moore to Warrington -	3	—	—	3	6	—	6	—	—	—	
Curzon Street (Birmingham) Deviations.	1	1	—	—	2	—	2	—	1	—	5 sidings and 5 cross-over roads less.
Pontardulais to Gorseinon Widening.	—	—	3	—	3	—	3	—	3	—	2 passenger line connections less. Widening brought into use in 1893.
Enderby Branch Junction, Narborough.	—	—	2	—	2	—	2	—	2	—	New branch line opened for mineral traffic in 1893.
Stalybridge Junction Railway.	2	—	3	—	5	—	5	—	3	—	1 goods line connection less. New railway opened in 1893.
	6	1	8	3	18	—	18	—	9	—	

NOTE.—(*a* and *b*.) A single or double junction, or a single or double crossing on the level, to be considered as one case. On single lines of Railway each connection with a portion of double line at loops, terminal stations, or junctions to be stated.

(*c*.) Each individual instance of a siding joining a passenger line, whether at a station or elsewhere, not included in *a* or *b* and each instance of connection between such siding and such passenger line, to be enumerated.

(*d*.) Each cross-over road not included under *c* connecting any two lines to be considered one case.

(*e* and *f*.) These numbers to represent the proportion of connections or crossings enumerated under *a*, *b*, *c*, *d*, the levers for working signals or points in connection with which have or have not been concentrated.

(*g* and *h*.) These numbers to represent the proportion of connections or crossings enumerated under *a*, *b*, *c*, *d*, the levers for working signals or points in connection with which have or have not been interlocked.

(*k* and *l*.) All cases in which safety points have or have not been applied to goods lines or goods sidings joining passenger lines, and enumerated under *b* and *c*, to be here stated.

Comparative Statement between Years 1892 *and* 1893, *showing Increase or Decrease in Year* 1893 :—

Name of Railway.	Number of Cases in which any Passenger Line is connected with or crossed on the Level by :				Number of Cases in which the usual requirements of the Inspecting Officers of the Board of Trade have or have not been complied with in the following respects :						Remarks.
					Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of Goods Lines and Sidings.		
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Have.	Have not.	Have.	Have not.	Have.	Have not.	
	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*	*l*	
1892.											
Main Lines - -	352	189	1,233	505	2,279	—	2,279	—	1,422	—	
Branch Lines - -	254	145	1,279	381	2,054	5	2,054	5	1,418	6	
	606	334	2,512	886	4,333	5	4,333	5	2,840	6	
		4,338			4,338		4,338		—	—	
		2,846							2,846		
1893.											
Main Lines - -	354	190	1,240	513	2,297	—	2,297	—	1,430	—	
Branch Lines - -	267	142	1,275	383	2,066	1	2,066	1	1,415	2	
	621	332	2,515	896	4,363	1	4,363	1	2,845	2	
		4,364			4,364		4,364		—	—	
		2,847							2,487		
Decrease in 1893 -	—	2	—	—	—	4	—	4	—	4	
Increase in 1893 -	15	—	3	10	30	—	30	—	5	—	

NOTE.—(*a* and *b*.) A single or double junction, or a single or double crossing on the level, to be considered as one case. On single lines of Railway each connection with a portion of double line at loops, terminal stations, or junctions to be stated.

(*c*.) Each individual instance of a siding joining a passenger line, whether at a station or elsewhere, not included in *a* or *b*, and each instance of connection between such siding and such passenger line, to be enumerated.

(*d*.) Each cross-over road not included under *c* connecting any two lines to be considered one case.

(*e* and *f*.) These numbers to represent the proportion of connections or crossings enumerated under *a*, *b*, *c*, *d*, the levers for working signals or points in connection with which have or have not been concentrated.

(*g* and *h*.) These numbers to represent the proportion of connections or crossings enumerated under *a*, *b*, *c*, *d*, the levers for working signals or points in connection with which have or have not been interlocked.

(*k* and *l*.) All cases in which safety points have or have not been applied to goods lines or goods sidings joining passenger lines, and enumerated under *b* and *c*, to be here stated.

NORTH-EASTERN RAILWAY.

STATEMENT of the PROGRESS made in INTERLOCKING, &c. during the Year 1893.

	Number of Cases in which any Passenger Line is connected with or crossed on the Level by :				Number of Cases in which Arrangements as under have been provided and have not been provided.					
					Concentration of Signal and Point Levers.		Interlocking of Signal and Point Levers.		Addition of Safety Points in case of any Goods Lines and Sidings.	
	Any other Passenger Line.	Any Goods Line.	Any Siding.	Any Cross-over Road.	Have been provided.	Have not been provided.	Have been provided.	Have not been provided.	Have been provided.	Have not been provided.
Alterations and Additions to Old Lines.	5	6	2	7	20	—	20	—	11	—
New Lines - - -	1	6	11	7	25	—	25	—	17	—
Total - - -	6	12	13	14	45	—	45	—	28	—

REPORT of PROGRESS in BLOCK WORKING for Year ending 31st December 1893.

The North-Eastern Railway Company have the absolute block system upon all railways on which passenger trains are run, except on the portions of line in respect of which exemption has been granted by the Board of Trade in accordance with the provisions of the Regulation of Railways Act, 1889.

CALEDONIAN RAILWAY.

STATEMENT of the PROGRESS of BLOCK WORKING and SIGNAL ARRANGEMENTS on LINES belonging to or worked by the COMPANY during the year to 31st December 1893, viz.:—

BLOCK WORKING.

Railways.	On Lines already open for Passenger Traffic on 1st January 1893.		On Lines opened for Passenger Traffic during 1893.	
	Consisting of Two or more Lines of Railway.	Consisting of a Single Line of Railway.	Consisting of Two or more Lines of Railway.	Consisting of a Single Line of Railway.
	Miles.	Miles.	Miles.	Miles.
Caledonian - -	—	10*	—	—
Callander and Oban -	—	—	—	—
Killin - - - -	—	—	—	—
Cathcart District - -	—	—	—	—
Lanarkshire and Ayrshire -	—	—	—	—
Solway Junction - -	—	—	—	—
Crieff and Comrie - -	—	—	—	5¾

* This increase is due to the Caledonian Company having acquired the Wemyss Railway.

SIGNAL ARRANGEMENTS.

Railways.	On Lines already open for Passenger Traffic on 1st January 1893.			On Lines opened for Passenger Traffic during 1893.		
	Concentration of Signal and Point Levers.	Interlocking of Signal and Point Levers.	Addition of Safety Points in case of Goods Lines and Sidings.	Concentration of Signal and Point Levers.	Interlocking of Signal and Point Levers.	Addition of Safety Points in case of Goods Lines and Sidings.
	No. of Cases.	No. of Cases.	No. of Cases.	No. of Cases.	No. of Cases.	No. of Cases.
Caledonian - -	11	11	1	45	45	15
Callander and Oban -	—	—	—	4	4	—
Killin - - - -	—	—	—	—	—	—
Cathcart District - -	—	—	—	—	—	—
Lanarkshire and Ayrshire -	—	—	—	1	1	1
Solway Junction - -	8	8	—	—	—	—
Crieff and Comrie - -	—	—	—	3	3	3

GLASGOW AND SOUTH-WESTERN RAILWAY.

Secretary's Office,
Glasgow, 15th February 1894.

SIR,

REFERRING to your circular letter of 20th December, I now send you herewith the return under section 4 of the Railways Regulation Act (Returns of Signal Arrangements, Working, &c.), 1873.

The only new line opened during 1893 is the Bridgeton Cross Extension between St. John's and Bridgeton Cross South Junction, and it is wrought under the absolute block telegraph regulations.

During the year the following changes have been made in the systems of working over certain portions of this company's railway:—

Between Girvan and Killochan double line has been opened and is wrought under absolute telegraph in place of train-tablet.

Between Dalrymple Junction and Patna train-tablet working has been introduced in place of absolute block telegraph and train-staff, and between Patna and Dalmellington the train-tablet has been introduced in place of train-staff only.

Between Girvan and Challoch Junction train-tablet working has been introduced in place of block telegraph and train-staff.

During this year the system of train-tablet in place of train-staff and block working may be extended, but our arrangements are not yet definitely settled.

I am, &c.,
F. H. GILLIES,
Secretary.

The Assistant Secretary,
(Railway Department,) Board of Trade, London.

GREAT NORTH OF SCOTLAND RAILWAY.

Secretary and General Manager's Office,
Aberdeen, 20th February 1894.

SIR,

WITH reference to your communication of 30th December last, I herewith forward returns of signal arrangements and systems of working in force upon this Company's lines.

I beg also to state that during the year 1893 new loops were provided at Drummuir, Longmorn, Dinnet, Grantown, and Knock, the stations being also re-signalled and interlocked; and the platforms, lines, and sidings at Ballater station were entirely re-constructed and re-signalled.

The siding points at Drum, Crathes ballast siding, Silverstrype siding, Glassel, and Dess stations have been provided with tablet-locking frames and safety points.

The following works are in progress:—New loop at Carron station, re-construction and extension of loop at Dufftown station, and alteration of Aberlour station.

Tablet working has been brought into operation between Tillynaught and Portsoy stations.

I am, &c.,
W. MOFFATT.

The Assistant Secretary,
(Railway Department,) Board of Trade, London, S.W.

NORTH BRITISH RAILWAY.

LIST of NEW STATIONS at which improved SIGNALLING ARRANGEMENTS have been brought into use during the Year 1893.

Clackmannan and Kennet.	Kincardine.

NEW SIDINGS provided with LOCKING FRAMES and SIGNALS in conformity with Board of Trade requirements during the Year 1893.

Bernard's, Gorgie.	Ellangowan Paper Works.	Ingliston Branch Junction.
Bonnyrigg.	Hawkhill.	Kilbagie.

STATIONS, SIDINGS, &c. at which SIGNALLING ARRANGEMENTS have been altered and improved during the Year 1893.

Abbotsford Ferry.	Eddleston.	Menstrie.
Addiewell Junction.	Edrom.	Meldon.
Alva.	Ewesley.	Middleton.
Angerton.	Falstone.	Millerhill Junction.
Auchtermuchty.	Gartness Junction.	Newbridge, Stirling
Balfron.	Gartness Station.	Ormiston.
Ballencrieff.	Gilnockie.	Pease.
Bellshill South.	Gordon.	Peebles Engine Shed.
Bents.	Gourdon.	Pittenweem.
Bervie.	Greenlaw.	Plashetts.
Blackhall.	Gretna.	Polmont.
Bo'ness High Junction.	Haddington.	Port of Monteith.
Bo'ness Low Junction.	Halbeath.	Prestongrange.
Bridgeton Cress.	Haymarket Central.	Raplock Crossing.
Bridgeton Cross South Junction.	Innerleithen.	Ravenswood.
Brinkburn.	Johnshaven.	Rothbury.
Buchlyvie.	Kielder.	St. Cyrus.
Burnmouth.	Kilconquhar.	St. Monans.
Caldarvan.	Kilsyth Junction.	Saughtree.
Canobie.	Kinross Junction.	Scotsgap.
Campsie Glen.	Kippen.	Selkirk.
Cardross.	Kirkliston.	Strathblane.
Cattermuir Crossing.	Knowesgate.	Tarset.
Crofthead.	Langholm.	Thorniéshope.
Chirnside.	Lauriston.	Thorneyburn.
Deadwater.	Leslie Crossing.	Townhill.
Dean Works.	Lindean.	Townhill Junction.
Duddingston Junction.	Macmerry.	Walkerburn.
Dundee Central.	Manuel.	Whitburn.
Duns.	Marchmont.	Winton.
Drymen.	Mairemill Crossing.	Woodburn.
Earlston.		

STATIONS, &c. at which improved SIGNALLING ARRANGEMENTS are intended to be made during the Year 1894.

Barrasford.	Guardbridge.	Sanderson's Siding.
Bellingham.	Greenend.	Polton.
Blanefield.	Heiton.	Standhill.
Bowshank.	Jedburgh.	Wall.
Chollerford.	Paterson's Siding.	Wark.
Chollerton.		

NEW BLOCK TELEGRAPHS complete or in progress, but not in practical operation.

From	To	Distance of Double Line. m.	ch.	Distance of Single Line. m	ch.
Macmerry	Smeaton Junction	—		6	54
Esk Valley Junction	Polton	—		2	8
Hawthornden Junction	Penicuik	—		4	31
Roxburgh Junction	Jedburgh	—		7	8
Riccarton Junction	Hexham Junction	—		40	71
Scots Gap Junction	Rothbury	—		13	4
Scots Gap Junction	Morpeth	—		11	8
Leuchars South Junction	St. Andrews (Links)	—		4	57
Polmont Junction	Polmont Station	0	17	—	
	Total	0	17	90	1

NOTE OF BLOCK TELEGRAPH WORKING introduced during the year 1893 on lines which were open for traffic prior to 1st January 1893.

PASSENGER LINES.

Passenger Lines. From	To	Distance of Double Line. m.	ch.	Distance of Single Line. m.	ch.
Drem	North Berwick	—		4	60
Longniddry	Haddington	—		4	60
Reston Junction	Ravenswood Junction	—		29	26
Millerhill	Roslin	—		5	73
Leadburn	Dolphinton	—		9	70
Hawthornden Junction	Leadburn	—		6	20
Peebles (Caledonian Junction)	Kilnknowe Junction	—		17	24
Selkirk Junction (Galashiels)	Selkirk	—		5	14
Riddings Junction	Langholm	—		7	8
Longtown	Gretna	—		3	18
Canal Junction, Carlisle	Silloth	—		21	4
Reedsmouth	Scots Gap Junction	—		14	2
Cambus	Alva	—		3	45
Ladybank	Mawcarse	—		11	23
Broomfield Junction	Bervie	—		12	8
Queensferry Junction (Ratho)	Dalmeny South Junction	—		4	6
Milngavie Junction	Milngavie	—		3	15
Stirling (Forth and Clyde Junction).	Stirling New Bridge Level Crossing	0	30	—	
Bo'ness High Junction	Bo'ness Low Junction	0	33	—	
	Total	0	63	162	76

GOODS LINES.—Nil.

NOTE OF BLOCK TELEGRAPH WORKING introduced on lines which have been opened during the year 1893.

Nil.

J. CONACHER.
General Manager,
North British Railway Company.

Edinburgh, 31st March 1894.

RAILWAY SERVANTS (HOURS OF LABOUR).

REPORT by the BOARD of TRADE respecting the Proceedings of the BOARD of TRADE under the RAILWAY REGULATION ACT, 1893, 56 & 57 Vict. c. 29, during the Year ended 27th July 1894.

(PRESENTED PURSUANT TO ACT OF PARLIAMENT.)

Ordered, by The House of Commons, *to be Printed,*
22 *August* 1894.

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REPORT by the BOARD of TRADE respecting the Proceedings of the BOARD of TRADE under the RAILWAY REGULATION ACT, 1893, 56 & 57 Vict. c. 29, during the Year ended 27th July 1894.

RAILWAY REGULATION ACT, 1893.

REPORT by the BOARD of TRADE, laid before both HOUSES of PARLIAMENT under Section 2 of the RAILWAY REGULATION ACT, 1893.

TO THE RIGHT HON. THE PRESIDENT OF THE BOARD OF TRADE, &c., &c., &c.

Sir, 22 August 1894.

IN presenting the first annual Report of the proceedings of the Board of Trade with regard to the Hours of Labour of the Servants of Railway Companies under the Railway Regulation Act, 1893, I desire to refer to a very few matters of public importance.

(1.) In the first place I have to testify to the willingness shown generally speaking by the Railway Companies to co-operate with the Board of Trade and to help their negotiations with the view of a reduction of all hours of labour which after inquiry appear to be unreasonable.

The Directors as well as the leading officials of nearly all Railway Companies have, up to the present, shown a desire to carry out the objects of the Legislature, and to give effect to the reasonable views of their servants; this has not been the case, however, as regards all complaints, and the Board of Trade recognise that it is probable that in a comparatively small number of representations they may have to put into action their legal powers under the Act.

(2.) The experience acquired of the working of the Act has strengthened my view that it is not possible to fix, with regard to the various classes of railway servants, hours of labour which, *à priori*, are reasonable. The circumstances of employment vary so greatly that it is impossible to say with reference to any class of railway servants that a particular scale of hours is reasonable for the whole of the members of that class. The amount of work done by signalmen and shunters, even by guards, varies so largely that a scale of hours which might be reasonable for one body of men might be utterly unreasonable for another. And I regard with extreme disfavour the policy of laying down a number of hours as a fair day's work, because whatever number of hours were fixed as a maximum would undoubtedly tend to become a minimum, and would thereby cause injustice to those men who are working under extreme pressure during the whole of the time for which they are employed.

(3.) The complaints which the Board of Trade have received from the men themselves, or from those acting on their behalf, have been moderate in their terms, and reasonable in their representations. The tone which they have adopted and the language which they have used with reference to their employers have been of material assistance to the Board of Trade in obtaining from the Railway Companies the very considerable reduction of hours which are set out in detail in Mr. Hopwood's interesting Report.

I have the honour to be,
Sir,
Your obedient Servant,
Courtenay Boyle.

TO THE SECRETARY OF THE BOARD OF TRADE, &c., &c., &c.

Sir,

I HAVE the honour to report the proceedings which have been taken up to the present date upon representations made to the Board of Trade under Section 1, sub sections 1 and 2, of the Railway Regulation Act, 1893.

That section provides that—

(1.) If it is represented to the Board of Trade, by or on behalf of the servants, or any class of the servants of a railway company, that the hours of labour of those servants, or of that class, or in any special case of any particular servants engaged in working the traffic on any part of the lines of the company are excessive, or do not provide sufficient intervals of uninterrupted rest between the periods of duty, or sufficient relief in respect of Sunday duty, the Board of Trade shall inquire into the representation.

(2.) If it appears to the Board of Trade, either on such representation or otherwise, that there is in the case of any railway company reasonable ground of complaint with respect to any of the matters aforesaid, the Board of Trade shall order the company to submit to them, within a period specified by the Board, such a schedule of time for the duty of the servants, or of any class of the servants of the company as will, in the opinion of the Board, bring the actual hours of work within reasonable limits, regard being had to all the circumstances of the traffic, and to the nature of the work.

The Act came into operation on the 27th July 1893, and the Board of Trade have therefore had about one year's experience of its working.

At the outset the Board of Trade had no means of estimating the nature or scope of the representations which would be made to them under the Act, and they have not attempted to lay down any regulations for the guidance of those who desire to make representations. In fact, it early became apparent that each complaint would have to be considered on its merits rather than in accordance with rules formulated for general application

The Board of Trade soon found, however, that representations of unreasonable hours of work would probably fall under three heads, namely :—

1. Those which were made by a single railway servant or by two or three servants, for instance, the signalmen working a particular signal box ;

2. Those of a more general character which related to a class of railway servants ; and

3. Those which affected the general body of servants working on a particular line.

At the outset apprehension was felt in certain quarters that where there was alleged ground of complaint falling under the first of these heads, servants might be deterred from complaining to the Board of Trade by a fear that the Board would in the course of administration communicate the source of the complaint to the company affected, with a result inimical to the interests of the complainants. Although the Board of Trade were not disposed to think that Railway Companies generally would offer any active opposition to those servants who made representations to the Board, it was felt that an assurance should be given the men that any communications they addressed to the Department would be treated as confidential. It has been accordingly the invariable practice of the Board of Trade to communicate with the railway companies upon the subject of the hours of labour of their servants without disclosing the source of the representation upon which the action of the Board is founded. Some correspondence on this subject will be found in Appendix A.

When it is represented to the Board of Trade that the hours of labour of any servants or class of servants are excessive, the Board call upon the railway company concerned to make a return of the actual and booked hours of such servants. The company in due course respond, and the Board have then an opportunity, not only of checking the statements made in the representation, but of arriving at a conclusion upon the information afforded as to whether there is a *primâ facie* case of overwork or not.

In Appendix B. to this Report will be found a form which has been prepared by the Department, for the purpose of obtaining from Railway Companies full particulars of the duties performed by their signalmen. It will be readily apprehended that, where a large number of signal cabins are affected by a complaint, time must necessarily elapse before a railway company can furnish all the information required by the form, and, again, considerable labour must devolve on this Department when digesting the information and arriving at a conclusion as to the hours which might properly be worked by signalmen at each box.

If the Board of Trade are advised that the servants' hours as disclosed by the railway company's return are excessive, the Board call upon the company forthwith to submit to them, within a specified period, such a schedule of time for the duty of their servants as will bring the actual hours of work within reasonable limits. The specified time which is allowed in the first instance is usually one month, but it is found in practice that that is insufficient, and the Board in most cases entertain an application for an extension. Nor is it surprising that this should be the case for it is impossible for a railway company to revise the hours of labour of their servants by a stroke of the pen. A demand upon a company to bring the actual hours of work of their goods guards, for instance, within reasonable limits cannot be met by the most liberally disposed company by the ready reply "our men have been worked 14 hours a day, and we admit that that is too much; in future they shall work 10 hours only." A general manager anxious to reduce the hours of the goods guards on his line would have to ask his directors for additional money; to rearrange practically the whole service of goods trains; in many instances to revise the time-table; to supply more locomotives; and to increase the staff. It would be obviously highly inexpedient, and, in the case of signalmen, at any rate, absolutely dangerous to the public, to force a company to employ in a hurry, and without adequate time for discrimination, a large number of men whose experience and knowledge of the work had not been sufficiently tested.

On the whole, experience goes to show that on a well-ordered and liberally managed line, where a desire to meet the requirements of the Board of Trade is clearly indicated, it is necessary to give a period of some months to enable the company to revise their schedule of hours and to get the new system of working into order.

As a matter of fact, the Board of Trade find that the Railway Companies, as a whole, respond fairly to the demands made upon them under the Act, and, as far as the means at their disposal will allow, show every disposition to put a stop to excessive hours of labour.

When a revised Schedule of hours of work is received it becomes the duty of the Department to consider whether the proposals of the company do or do not bring "the actual hours of work within reasonable limits, regard being had to all the circumstances of the traffic and to the nature of the work." It is apparent that the Board of Trade cannot lay down any general rules to guide themselves or to assist the Railway Companies in determining what are fair and reasonable hours, because the Act expressly provides that the Department is to have regard "to all the circumstances of the traffic and to the nature of the work." These words in the Statute impose on the Board of Trade the obligation to deal closely with each case on its merits; they have to consider the working of each signal box in the case of complaint by signalmen; the details of the shunting operations at each shunting yard, where the representation emanates from shunters; and the "running" of each train, where the representation comes from drivers and firemen.

In order to arrive at a proper conclusion as to the reasonableness of the proposals contained in a revised Schedule it has been found useful to invite the officers of the company to attend at the Board of Trade to discuss them. By adopting this course much valuable information as to "the circumstances of the traffic and the nature of the work," not otherwise available, is obtained by the Department; and as the result of discussions upon the proposals of a railway company, the Board of Trade often find that the revised Schedule, although perhaps not acceptable in every detail, is as a whole a great improvement upon the state of things existing at the time when the complaint was made.

In dealing with representations under the Act the Board have preferred to carefully investigate the circumstances in each case and to negotiate with the Railway

Railway Companies with a view to the removal of the ground of complaint, rather than to put in force their legal powers. On a revised Schedule many delicate and intricate questions must necessarily arise, and it is a matter for careful consideration whether where a genuine disposition on the part of the company to make a liberal compromise is apparent, it is not more expedient to accept general reductions in the hours of labour of the servants, even if a residuum of the demands of the Board remain unsatisfied, rather than to set the law in motion. Where, in a matter of complexity, the parties interested have reduced the points in dispute to a minimum, it is probably courting failure to go to a Court with discretionary powers to enforce compliance with that minimum.

The Board of Trade cannot anticipate what decision the Railway Commissioners may arrive at as to the reasonableness of railway servants' hours of labour, but it is obvious that when legal force has once been given to a schedule of hours, those hours may be looked upon by the Railway Companies, not as the maximum hours applicable to their servants, but as the minimum at which they may be disposed to employ them. Legal pressure would rather seem, then, to be applicable to those cases in which a railway company either obdurately refuses to comply with the Order of the Board of Trade, or declines to make concessions, which will reasonably meet the necessities of the case.

Some Railway Companies have frequently asserted that they have voluntarily done much to reduce the hours of labour of their servants, and as the Board of Trade were desirous of giving Railway Companies an opportunity of putting on record statements in regard to such work, they caused a letter to be addressed to the Associated Railway Companies on the subject. A copy of this communication and of the reply will be found in the Appendix C.

During the year covered by this Report, the Board of Trade have made inquiry and set the powers of the Statute in motion in seventy-two cases, namely:

24	affecting	the hours of	signalmen.
14	„	„	drivers and firemen.
14	„	„	men employed at stations, such as station masters, ticket collectors, porters, &c.
7	„	„	guards and brakesmen.
6	„	„	shunters.
4	„	„	gatekeepers.
1	„	„	train signal clerks.
1	„	„	platelayers.
1	„	„	wagon examiners.
72	cases.		

In some cases more than one complaint has been made with regard to the same line or section of a line.

As a rule, the representations are not made by or on behalf of individuals, but affect a class or classes of servants on a section or sections of a company's line.

It is impossible, therefore, to compute the number of servants whose hours of work have been dealt with under the provisions of the Act, but it is, no doubt, very considerable.

The following is a list of the cases dealt with by the Board during the year:

Company concerned.	Nature of Complaint.	Observations.
Great Western Railway -	Long hours of signalmen at and near Bristol and Tondu.	From returns obtained of the hours of work and nature of the duties at cabins on sections of the line near Bristol and Tondu, the Board were satisfied that there was reasonable ground for complaint, and a revised schedule of hours of work was ordered. The company agreed to some reductions in hours from 10 to 8 and 12 to 10, but these concessions were not sufficient to remove all ground for complaint, and negotiations are in progress.
Manchester, Sheffield, and Lincolnshire Railway.	Long hours of signalmen at a number of cabins on different parts of the line.	After having inquired into the representations returns were obtained of the whole of the company's cabins, and subsequently a revised schedule was ordered. The company agreed to reduce the hours at 24 cabins from 12 to 8, at four cabins from 10 to 8, and at 68 from 12 to 10. These concessions, although large, did not appear to the Board of Trade to bring the hours within reasonable limits, and further proposals are being prepared by the company.
Midland and South Western Junction Railway.	Long hours of signalmen.	The Board of Trade inquired into the representations and returns were obtained of the hours at the signal cabins on the line, and, with one exception, the booked hours did not appear unreasonable. The company consented to reduce the hours in that case. As it appeared that the chief cause for complaint was that the booked hours were frequently exceeded, the Board of Trade pressed the company for monthly returns of the actual hours. These have been supplied and the last returns received show some improvement in the hours actually worked.
London and North Western Railway.	Long hours of signalmen at cabins near Stockport.	The Board of Trade inquired into the representations and returns were obtained of the hours worked at the cabins on sections near Stockport and showed ground for complaint at four 12-hour cabins. A schedule was therefore ordered, and the company agreed to reduce the hours at two cabins from 12 to 10. The hours at the other two cabins have not been altered at present.
Lancashire and Yorkshire Railway.	Long hours of signalmen at cabins on sections between Miles Platting and Staley Bridge and Brighouse and Normanton.	The Board of Trade inquired into the representations; returns were obtained, and the company were ordered to submit a revised schedule of hours for these sections. The company have agreed to reduce the hours at one cabin from 12 to 8, at two cabins from 10 to 8, and at 16 from 12 to 10.

Company concerned.	Nature of Complaint.	Observations.
London, Brighton, and South Coast Railway.	Long hours of goods guards.	The attention of the Board of Trade having been drawn to the hours of the goods guards on this line, a revised schedule of time was ordered. The company submitted a revised time-table for the working of their goods trains, framed with the object of considerably reducing the hours of their men, and, after some negotiations and slight modifications, the time table has been accepted by the Board of Trade for a limited period, in order that experience may be gained of its working. The reduction in the hours will benefit not only the goods guards but also the drivers and firemen on this line.
South Eastern Railway -	Long hours of signalmen on the section between Gravesend and Maidstone.	The Board of Trade inquired into the representations, and returns were obtained. As there appeared reasonable ground for complaint with regard to the hours at some of the cabins, a revised schedule was ordered. The company agreed to reduce the hours at all the cabins at which they were held by the Board of Trade to be too long.
East London Railway -	Long hours of duty on Sundays of the staff employed at the stations.	The Board of Trade inquired into the representations, and returns were obtained; the company was ordered to submit a revised schedule of hours. The company at first proposed to reduce the hours at the cost of a demand upon the men to perform some duty every Sunday; they had been accustomed to have every alternate Sunday off duty. The Board of Trade could not concur in such a proposal, and the company have now made arrangements by which the hours of duty are considerably reduced, and the men are entirely off duty on some Sundays.
Great Northern of Ireland Railway.	Drivers and firemen -	The jury, at an inquest on a fireman in the employ of this company, having called attention to the hours of work, an inspecting officer of the Board of Trade held an inquiry at Dublin, with the result that the company were ordered to submit a revised schedule of the hours of labour of the Dublin drivers and firemen; they were further asked to furnish returns for the other portions of the line. Some reduction in the hours of the Dublin men has been obtained, but all the hours have not yet been, in the opinion of the Board of Trade, reduced within reasonable limits, and the Board are in correspondence with the company on the subject. The returns for the other portions of the line also showed good ground for complaint, and a revised schedule of hours of labour has been ordered.
North British Railway -	Long hours of gatekeepers near Bathgate.	The Board of Trade inquired into the representations, and returns were obtained of the hours of gatekeepers on sections near Bathgate. As the hours at three crossings were held by the Board of Trade to be excessive, a revised schedule was ordered. The company reduced the hours at the three crossings respectively from about 15 to $11\frac{1}{2}$, $14\frac{3}{4}$ to 10, and $12\frac{1}{2}$ to 10.

Company concerned.	Nature of Complaint.	Observations.
Great Northern Railway -	Long hours of shunters	Representations were made as to the hours worked at this company's goods yards, and after the Board of Trade had inquired into the representations there appeared to the Board of Trade to be reasonable ground for complaint. The company were therefore ordered to submit a revised schedule of hours for their shunters, and they did so, reducing the hours at all their principal goods yards to a maximum of 10 hours, including one hour for meals.
Metropolitan and District Joint Railway.	Hours of duty on Sundays of staff at stations.	The Board of Trade inquired into the representations; returns of the hours worked were asked for and received, together with a statement of the hours which the company proposed to work in future. A considerable reduction in the hours of work was shown, and the proposals were accepted.
Sligo, Leitrim, and Northern Counties Railway.	Long hours of drivers and firemen.	The Board of Trade inquired into the representations; returns were obtained of the hours worked, and, as they disclosed ground for complaint, a revised schedule was ordered. Certain proposals have been made by the company which afford some concessions: they are not deemed to be entirely satisfactory, however, and further negotiations are in progress.
Manchester, Sheffield, and Lincolnshire Railway.	Long hours of goods guards at Sheffield.	The Board of Trade inquired into the representations, and the company were ordered to submit a schedule. They have forwarded a time-table for the working of goods trains from Sheffield, but, although some considerable reductions of the hours are proposed, the arrangements are not completely satisfactory, and the Board are still in correspondence with the company.
Metropolitan Railway -	Long hours of staff at stations on Sundays.	After the Board of Trade had received a representation, they were informed by the persons who made the complaint that the company had revised the hours of work, and they did not think it necessary to take any further steps.
Belfast and County Down Railway.	Long hours of goods porters and shunters.	The Board of Trade inquired into the representations, but they did not disclose sufficient ground of complaint to justify further action.
Great Eastern Railway -	Long hours of signalmen on section of line between Chelmsford and Ipswich.	The Board of Trade inquired into the representations; returns were obtained of the hours of work and nature of the duties at the cabins on this section, and the company were ordered to submit a schedule. The company have reduced the hours at two cabins from 12 to 10, but the revised Schedule is not yet completely satisfactory.
Wrexham, Mold, and Connah's Quay Railway.	Long hours of enginemen, guards, brakesmen, and signalmen.	The Board of Trade inquired into the representations, and, as reasonable ground for complaint was found to exist, the company were ordered to submit a revised schedule. An extension of time to prepare the schedule has been granted in order to enable the company to carry out a scheme for the rearrangement of the hours of labour.
London and North Western Railway.	Long hours of shunters at Willesden.	The Board of Trade inquired into the representations, and returns of the hours worked were obtained; they did not disclose sufficient ground of complaint to justify further action.

Company concerned.	Nature of Complaint.	Observations.
Great Western Railway	Long hours of goods guards at Cardiff and Pontypool.	The Board of Trade inquired into the representations, and, reasonable ground for complaint having been found to exist, the company were ordered to submit a revised schedule, which has been received and shows some reductions. The Board of Trade are, however, still in communication with the company.
Great Western Railway	Long hours of signalmen at Newport.	The Board of Trade inquired into the representations, and a return was obtained of the hours and duties of signalmen within one mile of Ebbw Junction. The company were ordered to submit a revised schedule, the hours in some cases being considered excessive. The company have agreed to reduce the hours at some of the cabins.
Great Western Railway	Long hours of drivers, firemen, and guards on Abbotsbury Branch.	One of the inspecting officers of the Board of Trade, in a report on an accident on this branch, called attention to the hours of work of these servants. A schedule was ordered, and the company agreed to reduce the hours of all the men. The Board of Trade were at the same time informed by the company that there appeared to be no alternative, if the hours of the men were to be reduced, but to rearrange the train service, which they feared would be productive of inconvenience to the public.
Caledonian Railway	Long hours of drivers and firemen on Greenock and Glasgow trains.	The Board of Trade inquired into the representations, and as it was found that reasonable ground for complaint existed, the company were ordered to submit a schedule. This has been received, and is under consideration. It shows some reduction of the longer hours.
North British Railway	Long hours of drivers and firemen at Bathgate.	The Board of Trade inquired into the representations, and as the hours of work which were shown by the returns were held to be excessive, a revised schedule was ordered.
Metropolitan District Railway.	Hours of Sunday duty at stations on Hounslow Branch.	The Board of Trade having made inquiry into the representations, returns of the hours worked were asked for and received, together with a statement of the hours which the company of their own accord proposed to work in future. This was held by the Board of Trade to be satisfactory.
Great Eastern Railway	Long hours of staff at suburban stations.	The Board of Trade inquired into the representations, and a return of the hours worked at some of the stations was obtained. As reasonable ground for complaint was found to exist, the company have been ordered to submit a revised schedule. The company have asked for an extension of time to make their proposals.
Cambrian Railway	Long hours of drivers and firemen.	An inspecting officer of the Board of Trade, in a report on an accident on this line, called attention to the hours worked by the drivers and firemen. The company were ordered to submit a revised schedule. This has been received, and is under consideration. It shows large reductions in the actual hours formerly worked.
Great Western Railway	Long hours of signalmen, goods guards, and gatemen, in Penzance and Cornwall Mineral Divisions.	The Board of Trade inquired into the representations, and returns were obtained showing the hours of work of these servants. The company have reduced the hours of the gatemen, but reasonable ground of complaint with regard to the hours of the guards and signalmen still exists, and a revised schedule has been ordered.

Company concerned.	Nature of Complaint.	Observations.
Great Western Railway -	Long hours of signalmen on sections between Dawlish, Torquay, and Totnes.	The Board of Trade inquired into the representations, with the result that the company were ordered to submit a revised schedule. Satisfactory reductions were made at some cabins, but the Board are still in communication with the company as to others.
London, Chatham, and Dover Railway.	Long hours of porters -	The Board of Trade inquired into the representations, and returns were obtained of the hours worked by the porters at certain stations, with the result that a revised schedule has been ordered, but has not yet been received. An extension of time has been granted to the company to enable them to formulate their proposals.
Liverpool Overhead Railway.	Long hours of staff at stations.	The Board of Trade inquired into the representations, and, as the hours worked by some of the porters and foremen were held to be excessive, the company have been ordered to submit a schedule.
London and India Docks Railway.	Long hours of signalmen.	The Board of Trade inquired into the representations, and, as there appeared reasonable ground for complaint with regard to the hours of work at three cabins, the company have been ordered to submit a revised schedule. This has not yet been received, and the Board of Trade are in communication with the company on the subject.
Rhymney Railway - -	Long hours of drivers, firemen, guards, and brakesmen.	The Board of Trade inquired into the representations, and returns of the hours worked were asked for. As they disclosed reasonable ground for complaint, a revised schedule was ordered. Correspondence with the company has since taken place, and the company have been given time to make certain proposals.
North Eastern Railway -	Long hours of gatewomen near Northallerton.	The Board of Trade inquired into the representations, but the facts disclosed did not show sufficient ground for further action.
London, Chatham, and Dover Railway.	Long hours of drivers, firemen, and signalmen at certain places on this line.	The Board of Trade inquired into the representations, and returns were obtained of the hours of men working trains between Sevenoaks and Ashford, and of signalmen at a number of places. The hours worked by the drivers and firemen and signalmen were held by the Board of Trade to be excessive, and a revised schedule has been ordered.
Highland Railway - -	Long hours of drivers and firemen between Helmsdale and Inverness, and of signalmen at Tain.	An inspecting officer of the Board of Trade, in a report on an accident to a train on this line, called attention to the hours of these men, and the company were ordered to submit a revised schedule. This has been received; it shows that the hours have been considerably reduced, and the Board of Trade are not prepared to take exception to them.
Lancashire and Yorkshire Railway.	Long hours of signalmen on the section between Tanshelf and Whitley Bridge.	The Board of Trade inquired into the representations, with the result that the company were ordered to submit a revised schedule. The Board of Trade have agreed to accept a reduction in the hours at three cabins from 12 to 10, but other boxes are still in question; and the Board of Trade are in communication with the company.

Company concerned.	Nature of Complaint.	Observations.
Midland Railway - -	Long hours of drivers and firemen in South Wales.	The Board of Trade inquired into the representations, and returns of the hours worked were asked for. As there appeared to be ground for complaint, a revised schedule has been ordered. It has been received as regards a number of the men, but is not satisfactory, and the Board of Trade are pressing for a complete schedule.
London, Brighton, and South Coast Railway.	Long hours of train signal clerks on section between New Cross and Croydon.	The Board of Trade inquiry into the representations, with the result that the company were ordered to submit a revised schedule; while the company contend that the Act does not apply to these servants, they have largely and satisfactorily reduced their hours of work.
North Eastern Railway -	Long hours of relief signalmen, signalmen, station-masters, and porters on Middlesborough and Guisborough Branch.	The Board of Trade inquired into the representations, and returns of the hours were asked for. They are under consideration.
Great Northern Railway -	Increase of hours of signalmen at Stevenage.	The Board of Trade inquired into the representations, and a statement of the duties performed at the cabins at Stevenage has been obtained. It appears, however, that, although notice to increase the hours has been given, the increased hours have not actually been put in force. The Act does not therefore apply, but the Board of Trade are communicating with the company on the subject.
London and North Western Railway.	Long hours of porters in neighbourhood of Stockport.	The Board of Trade inquired into the representations, and returns were obtained of the hours worked by porters at certain stations in this district. A revised schedule has been ordered.
West Lancashire Railway -	Long hours of drivers, firemen and cleaners.	The Board of Trade inquired into the representations, and returns were obtained of the hours of these servants. Reasonable ground for complaint being found to exist, a revised schedule has been ordered.
Sheffield and Midland Joint Line.	Long hours of signalmen on section between Hyde Junction and Marple.	The Board of Trade inquired into the representations, and returns were asked for. As there was found to be reasonable ground of complaint, a revised schedule has been ordered.
London and North Western and Great Western Joint Railway.	Long hours of ticket collectors at Rock ferry.	The Board of Trade inquired into the representations, and the case is under the consideration of the Board of Trade.
North British Railway -	Long hours of signalmen.	An inspecting officer of the Board of Trade, in a report on an accident on this railway, called attention to the hours of the trainmen and signalmen. After correspondence a revised schedule was ordered, but is not yet due.
Great Western Railway -	Long hours of signalmen and station-masters on section between Leaton and Ruabon.	The Board of Trade inquired into the representations, and a revised schedule has been ordered as regards signalmen. Further inquiries are in progress with reference to the hours worked by the station-masters.
North Eastern Railway -	Long hours of passenger porters at Scarborough.	The Board of Trade inquired into the representations, and the company have now satisfactorily reduced the hours.
London and North Western Railway.	Long hours of station-masters and porters on section between Eccles and Bolton.	The Board of Trade inquired into the representations, and returns were obtained of the hours worked. A schedule has been ordered.

Company concerned.	Nature of Complaint.	Observations.
Great Eastern Railway -	Long hours of signalmen near Norwich.	The Board of Trade inquired into the representations, and, after returns of the hours worked had been received and considered, a revised schedule was ordered.
London, Chatham, and Dover Railway.	Long hours of shunters at Victoria.	The Board of Trade inquired into the representations, and returns of the hours were obtained; a revised schedule has been ordered. An extension of the time has been granted to enable the company to make certain arrangements.
Lancashire and Yorkshire Railway.	Long hours of signalmen near Accrington.	The Board of Trade inquired into the representations, and, after a return had been received and considered, a revised schedule was ordered.
Festiniog Railway - -	Long hours of drivers and firemen.	- - - ditto.
North Eastern Railway -	Long hours of signalmen near Ferryhill.	The Board of Trade inquired into the representations, but the returns of the hours at present worked have not as yet been received.
Great Eastern Railway -	Long hours of shunters and pointsmen at London yards.	- - - ditto.
North Eastern Railway -	Long hours of greasers and wagon examiners near Darlington.	- - - ditto.
Great Northern Railway -	Long hours of gatemen near Newark.	The Board of Trade are inquiring into the representations.
Great Northern Railway -	Long hours of drivers and firemen at Peterborough.	- - - ditto.
Great Northern Railway -	Hours of signalmen at Beeston.	- - - ditto.
London, Brighton, and South Coast Railway.	Long hours of shunters at Victoria.	- - - ditto.
Great Eastern Railway -	Insufficient intervals of rest of platelayers at Stratford.	- - - ditto.

In the course of inquiry into the representations of unreasonable periods of works which have been received, the Board of Trade have had under consideration returns showing the actual hours of a large number of railway servants of different classes, and in some cases these returns have disclosed very long periods of duty.

Thus, although signalmen are rarely returned as being accustomed to be on duty for much more than 12 hours, it appeared that at one cabin a man was at work for 25½ hours, and that on each of the four days following this serious tax on his energies he was on duty for from 13 to 15 hours. On the same line, at other cabins, signalmen in the course of changing from the late to the early turn of duty have been required to work from 16 to 19 hours.

Of other men whose work, like that of signalmen, is confined to one place, shunters have in some instances worked for long periods, one day of 16¾ hours having been met with, while on a southern line men have on Sundays, when, however, the work is comparatively light, been on duty during a space of time covering 18 or 19 hours, with considerable intervals of rest.

Porters

Porters and the staff employed at stations generally have not been found to work for such long periods, although instances occur in which the day's work covers from 16 to 17 hours, with intervals of rest.

With regard to men employed in working trains, it almost necessarily happens that the booked hours are often exceeded, and the actual hours have in some instances been very heavy. The most flagrant case which has come to the notice of the Board of Trade was that of an engine-cleaner on a small line of railway, who was employed for 34 consecutive hours, acting as a fireman during a considerable portion of the time. On the same line both drivers and firemen were sometimes on duty from 18 to 24 hours.

Instances such as these have, fortunately, been exceptional, but, nevertheless, many cases have occurred in which drivers, firemen, and guards have worked, principally on goods trains, for from 16 to 18 hours.

The Board of Trade have not experienced any difficulty in inducing the companies to promptly and effectively deal with such hours of labour. They have found that the revised schedules submitted by Order of the Board of Trade always bring the actual hours down to 12 or under. In outstanding cases, the subject of dispute between Companies and the Board of Trade, the points involved are of comparatively minor importance; for instance, whether the hours at a signal box, which formerly exceeded 12 and have been reduced to 12 hours, are still excessive, and whether they should not be further reduced to 10 hours, or whether the hours at a box already reduced to 10 hours from 12 should not properly be brought down to eight. These are questions of nicety and must be adjusted; they stand on a very different footing, however, to those cases in which men have been worked for an extraordinary number of hours, to their own danger and that of the travelling public.

I have, the honour to be, Sir,
Your obedient servant,
21 August 1894. FRANCIS J. S. HOPWOOD.

Appendix A.

Railway Regulation Act, 1893.

(R. 10,717.)

Board of Trade (Railway Department),
Sir, London, S.W., 19 September 1893.

I am directed by the Board of Trade to request that you will call the attention of the Railway Association to the provisions of the Act to amend the law with respect to the hours of labour of railway servants which has recently received the Royal Assent.

Under Sub-section (1) of Section 1 of that Act, if it is represented to the Board of Trade, by or on behalf of the servants or any class of the servants of a railway company, that the hours of labour of those servants or of that class or in any special case of any particular servants engaged in working the traffic on any part of the lines of the company are excessive, or do not provide sufficient intervals of uninterrupted rest between the periods of duty or sufficient relief in respect of Sunday duty, the Board shall inquire into the representation.

Under Sub-section (2) if it appears to the Board of Trade, either on such representation or otherwise, that there is, in the case of any railway company, a reasonable ground of complaint with respect to any of the matters aforesaid, the Board shall order the company to submit to them within a period specified by the Board such a schedule of time for the duty of the servants or of any class of the servants of the company as will, in the opinion of the Board, bring the actual hours of work within reasonable limits, regard being had to all the circumstances of the traffic and the nature of the work.

Sub-section (3) lays down the procedure which may be adopted by the Board in the event of failure on the part of a railway company to comply with any Order made by them; Sub-sections (4), (5), and (6) confer the necessary powers upon the Railway and Canal Commission to insure the efficiency of their jurisdiction, and Sub-section (7) provides that the Act shall not apply to any servant of a railway company who is, in the opinion of the Board, wholly employed either in clerical work or in the company's workshops.

The Board of Trade feel assured that the directors of railway companies will use their best endeavours to bring the actual hours of work of their servants within reasonable limits, and that the object which Parliament had in dealing with this important question will largely be met by the railway companies themselves, without the active intervention of this Department, but the Board will receive (as indeed it has already received) from various quarters complaints and representations which will make it necessary for them to communicate with the companies affected, and to institute inquiries.

The Board of Trade anticipate that, in certain instances, representations will be made by or on behalf of a limited number of servants whose cases may appear to present features of hardship, and fears have been expressed that such representations may prejudicially affect these servants with their employers. The Board trust that, in order to ensure the fair and equitable working of the Act, servants may be given to understand that they may openly and without fear of consequences make full use of the opportunities which the Act has afforded them of representing any instances of overwork to the Board of Trade.

I am to add that the Board will be happy to receive any observations or any statements which the Association may desire to submit as to the steps which railway companies are taking voluntarily to bring the actual hours of work of their servants within reasonable limits.

I am, &c.

Sir Henry Oakley, (signed) *Courtenay Boyle.*
Great Northern Railway, King's Cross, N.W.

(R. 12,157.)

London and North Western Railway,
General Manager's Office,
Euston Station, London, N.W.,
2 November 1893.

Sir,

THE letter you addressed to the honorary secretary of the Railway Companies' Association on the 19th September, has been referred to the several railway companies to deal with according to the manner in which the question may affect the particular relations of each company with its servants.

In giving evidence before the Committee of the House of Commons, which sat recently to inquire into the Hours of Labour of Railway Servants, my predecessor, the late Sir George Findlay, explained at length the course which had been taken by this company, and the policy pursued generally by the directors in dealing with the hours of labour of their *employés*, and no change has since been made in this mode of procedure, nor is any change contemplated.

The Board of Trade need not be under any apprehension that servants of this company will be prejudiced by availing themselves of the provisions of the Act, if any of them should think fit to do so. The directors trust that all the reasonable demands of their men have been fairly met, but, if not, the Board are, and always will be, prepared to consider any representations which those men may wish to make, whether in relation to their hours of labour or otherwise, and to deal equitably with any cases of alleged hardship that may be brought under notice.

I am, &c.

Sir Courtenay Boyle, K.C.B. (signed) *F. Harrison.*
(Railway Department), Board of Trade, S.W.

(R. 12,453.)

The Railway Companies' Association,
King's Cross Station, London, N.,
11 November 1893.

Sir,

Your letter of the 19th September on the above subject has been carefully considered by the Railway Companies' Association.

It is not necessary for me to follow your exposition of the provisions of the Act, but I am desired to renew the assurances which have already been given to the Board of Trade and to Parliament by correspondence and evidence that the intention and object of the Act of remedying any just complaints of excessive or unreasonable hours of labour of railway servants engaged in the conduct of traffic has the approval of the companies represented on the Association.

The Association concur with the Board of Trade in feeling assured that all companies will use their best endeavours to deal with any complaints without the active intervention of the Department, and to enable this to be done they ask that any companies affected may at once receive copies of any representations which may be addressed to the Board of Trade relating to their regulations or practice.

The Association believe that the opportunity of full inquiry by the Board of Trade into such complaints as the companies are themselves unable to remedy, should, and they hope will, give public confidence that the companies, equally with the Board of Trade and Parliament, desire to avoid any preventible cases of undue hours of labour.

The Association are not aware of any justification for the suggestion that representations made in accordance with the Statute by or on behalf of any servants may prejudicially affect those servants with their employers, and they have no hesitation in expressing their conviction that all railway servants may openly and without fear of consequences make use of the powers of the Act.

Those portions of your letter which relate to the separate action of companies have been referred to the respective boards for any observations they may desire to make.

I am, &c.
(signed) *H. Oakley.*

Sir Courtenay Boyle, K.C.B.
(Railway Department), Board of Trade.

(R. 12,453.)

Board of Trade (Railway Department),
7, Whitehall Gardens, London, S.W.
2 December 1893.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 11th ultimo, on the subject of the Railway Regulation Act, 1893, and with reference to your request that copies of any representations made to the Board under that Act may be at once forwarded to the companies concerned, I am to state that the Board, after careful consideration, are of opinion that they would not be justified in adopting this course, but that as far as possible the substance and effect of such representations shall be communicated.

I am, &c.
(signed) *Courtenay Boyle.*

Sir Henry Oakley,
The Railway Companies' Association,
King's Cross Station, N.

Appendix B.

Form of Return showing the Hours of Work and Nature of the Duties of Signalmen.

Station.	Cabin.	State if Junction Cabin or not.	Particulars and Number of Running Lines.							Particulars of Instruments, Gates, Telegrams, &c.									Average Number of Trains Passing.						Number of Men Employed.						Shunting Performed.	Remarks.
			Up.			Down.						Level Crossing Gates.				Speaking Telegraph Instruments.	Telephones.	Average Number of Messages dealt with Daily.		6.0 a.m. to 6.0 p.m.		6.0 p.m. to 6.0 a.m.		Greatest Number in any One Hour.		Signalmen.		Assistants.		Train Register Boys.			
			Fast.	Slow.	Goods.	Fast.	Slow.	Goods.	Platform Loops or Bays.	Sets of Block Instruments.	No. of Working Levers.	Number.	Worked from Box.	Not Worked from Box.	If a busy Crossing.			Railway.	Postal.	Up.	Down.	Up.	Down.	Up.	Down.	No.	Hours of Duty.	No.	Hours of Duty.	No.	Hours of Duty.		

Appendix C.

(R. 2,043.)

Board of Trade (Railway Department),
7, Whitehall Gardens, London, S.W.,
27 February 1894.

Sir,

I am directed by the Board of Trade to address a communication to your Association with reference to the administration by this Board of the powers conferred on them by the Railway Regulation Act, 1893.

The Act came into operation on the 27th day of July 1893, and since that date the Board have received a number of representations complaining of the excessive hours of labour of various classes of railway servants.

The representations have been of two classes, namely, those of a general character affording information tending to show a *primâ facie* case of overwork by a railway company of one or more classes of servants over the whole line or system, and more particular complaints alleging that the hours worked by the men at a station named or at certain signal cabins specially referred to are unreasonably long.

While the Board have found it necessary to decline to furnish railway companies with copies of the complaints received either from their servants or those acting on their behalf, they have in every case in which representations of overwork have been made afforded the railway company affected by the complaint the necessary material to enable the directors to give the matter their early consideration.

The Board are glad to acknowledge the promptitude and courtesy with which railway companies generally have dealt with the demands made upon them by the Board under the authority of the statute.

In the course of the administration of the Act the Board have received assurances that railway companies are actively engaged in remodelling their arrangements with their servants and in revising the hours of labour of their men.

The Board of Trade feel that it is highly expedient that steps voluntarily taken by the companies to put an end to excessive hours of labour should be communicated to this Board.

The information afforded would be useful both to the employers and the employed, and would also materially assist the Board when dealing with allegations of overwork.

I am therefore to ask you to move your Association to cause the Board of Trade to be furnished, at an early date, and in as detailed a form as practicable, with information relative to the provision made and steps taken by the companies with a view to shorten and regulate the hours of labour of their servants.

I am, &c.
(signed) *Francis J. S. Hopwood.*

Sir Henry Oakley, Secretary,
The Railway Companies' Association,
King's Cross Station, N.

(R. 4,968.)

The Railway Companies' Association,
King's Cross Station, London, N.,
26 April 1894.

Sir,

I HAVE submitted to the Railway Association your letter of the 27th February, referring to the administration by the Board of Trade of the powers conferred on them by the Railway Regulation Act, 1893, and asking the Association to furnish, at an early date, and in as detailed form as practicable, information relative to the provision made and steps taken by the railway companies with the view to shorten and regulate the hours of labour of their servants.

I am desired to state in reply that the companies have incurred large capital expenditure in the improvement of facilities for working their traffic, including the enlargement of their stations, and the provision of additional siding accommodation and other conveniences.

The staff has also been largely increased, and other means adopted to avoid undue pressure or excessive hours of work.

It is well known to the Department that the conditions of traffic are constantly changing, and that on occasions, such as the revival of trade after the late coal strike, the demands of traders, each pressing for the immediate transport of his particular consignments, render it practically impossible to avoid delays and detentions which entail temporarily longer hours of duty on the staff than is either necessary or desirable under ordinary circumstances.

The Board may, however, feel assured that the companies are fully alive to the disadvantages attendant on unduly long working hours, and they have taken, and as occasion arises will continue to take, all requisite steps to bring the hours within reasonable limits, having regard to the nature of the work to be performed.

The Association find on inquiry that the trade and working requirements of the several companies differ so widely that it is not practicable to submit in a condensed or tabulated form statements of the improvements and additions made by each company, and any special inquiries should be directed to the particular company from whom information is sought.

I am, &c.
(signed) *H. Oakley*,
Hon. Secretary,
Railway Companies' Association.

To the Assistant Secretary
(Railway Department), Board of Trade, S.W.

RAILWAY SERVANTS (HOURS OF LABOUR).

REPORT by the Board of Trade respecting the Proceedings of the Board of Trade under the Railway Regulation Act, 1893, 56 & 57 Vict. c. 29, during the Year ended 27th July 1894.

(Presented pursuant to Act of Parliament.)

Ordered, by The House of Commons, *to be Printed,*
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RAILWAYS (WORKMEN'S TRAINS ON THE METROPOLITAN LINES).

NOTES OF CONFERENCE

HELD AT THE

BOARD OF TRADE

ON 28TH JUNE, 1893, WITH

REPRESENTATIVES OF THE LONDON COUNTY COUNCIL

AND

REPRESENTATIVES OF THE RAILWAY COMPANIES HAVING TERMINI IN THE METROPOLIS

(SIR COURTENAY BOYLE, K.C.B., IN THE CHAIR);

AND ALSO

COPY OF SUBSEQUENT CORRESPONDENCE BETWEEN THE BOARD OF TRADE, THE LONDON COUNTY COUNCIL, AND THE RAILWAY COMPANIES.

Presented to both Houses of Parliament by Command of Her Majesty.
August 1894.

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TABLE OF CONTENTS.

No.	Name.	Date.	Subject.	Page.
		1893.		
1	Conference at Board of Trade with Representatives of London County Council and of Railway Companies having Termini in Metropolis.	June 28	Workmen's Trains.—Discussion of Recommendations of the Public Health and Housing Committee of the London County Council.	1
			For recommendations, *see* - - -	2
			For suggested zones and zone rates, *see* -	21
			For resolutions agreed to, *see* - -	31
2	London County Council to Board of Trade.	December 9	Inquiring whether Board have received any further communications from the Companies, especially with respect to the question of grouping fares.	32
3	Board of Trade to Sir Henry Oakley.	December 14	Sending copy of No. 2, and inquiring whether a meeting of adjourned conference might with utility be arranged.	32
		1894.		
4	Sir Henry Oakley to Board of Trade.	January 18	Stating that Railway Companies have considered suggestion for the adoption of a system of grouping fares, and for reasons stated have come to conclusion that their present practice, which has been adapted to local wants, cannot be wisely disturbed, adding that the Companies approve and adopt the arrangements come to at the Conference.	32
5	Board of Trade to London County Council.	February 20	Sending copy of Sir Henry Oakley's letter -	33
6	London County Council to Board of Trade.	April 27	Stating that in view of their Committee dealing with matter, it seems useless to carry discussion further, or to suggest further conference, and that in reporting to Council they will recommend that necessity for a Parliamentary Inquiry be urged upon the Government.	33
7	Board of Trade to Sir Henry Oakley.	May 4	Sending copy of letter from London County Council.	34
8	Sir Henry Oakley to Board of Trade.	May 5	Acknowledging receipt of same, and stating that he will communicate with the Railway Companies.	34
9	Board of Trade to Sir Henry Oakley.	June 21	Proposing to publish as a Parliamentary paper the Notes of Proceedings at Conference, and asking if Companies object.	34
10	Sir Henry Oakley to Board of Trade.	July 4	Stating that Companies see no objection to the proposal.	35
11	Board of Trade to London County Council.	July 20	Stating that it is proposed, with concurrence of Companies, to publish Notes of Conference and forwarding proof.	35
12	London County Council to Board of Trade.	August 3	Stating that Council have no observations to offer on proposal.	35

No. 1.

BOARD OF TRADE,
WHITEHALL GARDENS, S.W.,
Wednesday, 28th June, 1893.

NOTES OF CONFERENCE WITH REPRESENTATIVES OF THE LONDON COUNTY COUNCIL AND REPRESENTATIVES OF THE RAILWAY COMPANIES HAVING TERMINI IN THE METROPOLIS.

SIR COURTENAY BOYLE, K.C.B., Permanent Secretary of the Board of Trade, in the Chair.

SIR COURTENAY BOYLE was accompanied by Mr. F. J. S. HOPWOOD, C.M.G., Assistant Secretary, Railway Department, and Major MARINDIN, R.E., C.M.G.

The representatives of the London County Council were as follows :—

Mr. PICKERSGILL, M.P.,
Mr. LEON,
Mr. BEACHCROFT,
Rev. FLEMING WILLIAMS,
Mr. BRUCE,
Mr. HUNTER,
Mr. MCDOUGALL,
Mr. RUSSELL, the Clerk of the Public Health and Housing Committee.

The representatives of the Railway Companies were as follows :—

Sir HENRY OAKLEY (Great Northern),
Mr. BIRT (Great Eastern),
Mr. DRURY (Great Eastern),
Mr. BOLLAND NEWTON (North London),
Mr. SCOTTER (London and South-Western),
Mr. W. FORBES (London, Chatham, and Dover),
Mr. WARD (Midland),
Sir MYLES FENTON (South-Eastern),
Mr. SARLE (London, Brighton, and South Coast),
Mr. BELL (Metropolitan),
Mr. POWELL (Metropolitan District),
Mr. ALLEN (Great Western),
Mr. C. H. MASON (London and North-Western),
Mr. F. HARRISON (London and North-Western).

The Chairman : Mr. Pickersgill and Sir Henry Oakley, this meeting is the result of communications which have passed between the Board of Trade and the County Council of a very long date. At the early inception of the correspondence it occurred to me that it would be desirable that there should be a friendly conversation here between the representatives of the County Council who are interested in the question of workmen's trains and the managers of the principal railway companies having termini in London. There were difficulties which prevented that conference in the first instance, and several steps have been taken with very considerable ability by the London County Council, on the one hand, and with very considerable goodwill

by the metropolitan railway companies on the other; and I am happy to say that at last we have arranged for a conversation across this table.

Upon that conversation I should like to say two things. The first is this: That the question was laid before the President of the Board of Trade as to whether he himself should preside at this conversation. He considered that it was best that in the first instance the conversation should take place in the presence of a subordinate official rather than of himself, so that the result of our deliberations to-day might be laid before him without his hands being at all tied in the event of our not coming to an agreement as to the course which should be suggested. I think that that line of policy will commend itself probably to your judgment. The second point is this: That there is at the present moment in Parliament a gentleman who has proposed a Bill dealing with a portion of this question, Sir Blundell Maple, and the President of the Board of Trade would have been delighted if he could have been present to-day, but, unfortunately, to our universal regret he is so unwell as to be unable to be present. He fully recognises the importance of this question, but merely expresses his regret that he cannot come here to-day in a very courteous letter that I have received from him.

The next point is this, as regards procedure. I regret to have to say that I have to be in the House of Commons on a very important Committee at half-past five; therefore we have only got two hours and a half to-day, but if I cannot go on, Mr. Hopwood, the Railway Secretary of the Department, to whom I am happy to introduce you to-day, will be able to take my place.

I do not know, Mr. Pickersgill, what course of procedure we should adopt to-day. Perhaps it would be convenient if the County Council were to say very briefly upon what points they are not quite satisfied, and then we can see whether the railway companies could meet them.

Mr. Pickersgill: I presume you have called upon me because I am a Member of Parliament, but I am not here in the capacity of a Member of Parliament, but as one of the representatives of the London County Council. I think, perhaps, it would be only just to Mr. Beachcroft, who has taken by far the most prominent position in this matter on behalf of the County Council, that your observations should be addressed to him, rather than to me, on this question.

The Chairman: I assure you it is a very important fact that you are a Member of Parliament, but the main point is that your name is first on the list that comes before me to-day, and that Sir Henry Oakley's name is the first on the list on the other side. Anyhow, you are the first person I should address on the subject, but if you think Mr. Beachcroft should be addressed, I should be happy to refer to him.

Mr. Pickersgill: I think, sir, that probably it would be more convenient that Mr. Beachcroft should make the statement on behalf of the County Council.

The Chairman: How would it be that we should adopt that procedure—that the County Council should say in what respects they still think there are shortcomings on the part of the railway companies, and that then we should attempt to decide how far the views of the County Council can be met. How will that line of action suit you?

Mr. Pickersgill: I should think that would be very convenient.

Sir Henry Oakley: I think, as far as we are concerned, that would be acceptable to us, if it is acceptable to Mr. Beachcroft.

The Chairman: The alternative would be that I should present to you some sort of digest which has got into the minds of the Board of Trade at the present moment. I do not think I can quite do that; I do not think we have sufficiently assimilated and digested the various observations which have been made on the one side and the other to be able to say what we think ourselves should be done.

Mr. Beachcroft: I think probably the course suggested is likely to be the most convenient one. Of course, as you are aware, we had a somewhat informal meeting of a similar kind to this, only less formal, two years ago, and, as a result of that informal meeting, the County Council received a letter from Sir Henry Oakley, containing observations on the proposals then put forward on behalf of the County Council. I have those in my hand, and it will not take me, perhaps, a moment to read them. One was, "That the accommodation already afforded to the workmen by the companies "respectively meets all the requirements that have yet been made." Then "Secondly, "considering the urgent conditions under which the suburban traffic of the companies "is conducted, and the necessity of adequately meeting the convenience of the general "public, it is not practicable to lay down any general rule applicable to all either with

" reference to hours of running, or to the rates to be charged. Thirdly, that the " companies will respectively endeavour to supply all needful workmen's accommoda- " tion in any district in which workmen's houses may be provided as the demand " arises, and fourthly, that the companies, being subject to the Board of Trade " regulations, both as to the hours of workmen's trains and the fares to be charged " thereby, any question or difference can be readily submitted for the decision of that " Department. That these resolutions be communicated to Lord Compton," who was then Chairman of the Housing Committee of the London County Council, " and his " colleagues with the companies' acknowledgments of their courtesy in assisting in the " discussion of this question." The Council were not quite satisfied with that reply; as a result, certain reports were prepared and were submitted to you. Those reports contain various suggestions which your Department were good enough to put before the metropolitan railway companies with a view to their saying how far they were able to comply with the suggestions which were contained in those recommendations. We received replies through you from the metropolitan companies, and I hold in my hand a short tabular statement which contains in effect the result of those replies.

The Chairman: What tabular statement are you referring to?

Mr. Beachcroft: This statement (*exhibiting document*). I think you have that, and I think copies are before the representatives of the railway companies.

Sir Henry Oakley: Yes, we have them.

Mr. Beachcroft: Upon that the Council further considered the matter through its Committee, which submitted a report to the Council in the month of March in the present year, which further report (I need not refer to this point at the present moment) had relation to the practice in continental cities. They repeated in this report by way of recommendation, the recommendations put forward on the previous occasion, with certain additional recommendations, particularly in connexion with the adoption of the zone system. I would submit that, possibly the most convenient course now to adopt—the one that I would suggest—is that we should take those proposals* as they are put in the form of our report *seriatim*. The Council has, to a certain extent, I may say, given birth to its own views as regards those particular recommendations, and possibly the representatives of the railway companies can indicate to the County Council the objections they see to the adoption of those recommendations. The first recommendation which we reiterate in our report, which I have just referred to, is: "(1) That workmen's tickets be made available for return by any train carrying third-class passengers." I would submit with deference, Mr. Chairman, that the more convenient course would be, as we, the County Council, so to speak, have not, of course, the knowledge which the great metropolitan railway companies have, and may very likely be in error in many of the views which we entertain, that we should hear from the representatives of the companies their views with regard to that point.

The Chairman: In other words, that we should take the recommendations on page 2——

Mr. Beachcroft: Of course I am only making that as a suggestion, but I think, Sir Courtenay, that that would be the convenient course.

The Chairman: That we should take the recommendations on page 2 *seriatim*, and that we should attempt to see what can be done by each company?

Mr. Beachcroft: I think so.

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* Recommendations of the Public Health and Housing Committee of the London County Council:—

(1.) That workmen's tickets be made available for return by any train carrying third-class passengers.

(2.) That the issue of quarterly or monthly third-class tickets be extended to all stations within the limit of the cheap train service.

(3.) That the conditions as to the issue of workmen's tickets, the fares, kind of tickets supplied and trains by which available, be published not only in the book of time-tables of each company, but be conspicuously advertised by means of posters at all stations served by workmen's trains.

(4.) That, except in the case of quarterly or monthly third-class tickets, all workmen's tickets be daily ones.

(5.) That all third-class trains, whether on main or branch lines, arriving at the London termini up to 8 a.m. be workmen's trains throughout the area of the cheap train service.

(6.) That all third-class trains from London termini, up to 7.30 a.m. be also workmen's trains throughout the same area.

(7.) That when insufficient third-class accommodation is provided in a workmen's train, the holder of a workman's ticket be allowed to travel by a superior class without extra charge.

(8.) That the zone system of tariffs be adopted.

The Chairman: It occurs to me that that would be a very convenient course of procedure; it would take some time.

Sir Henry Oakley: We should not make any objection to that.

Mr. Scotter: I think it would be the quickest course.

The Chairman: What do you say, Mr. Birt?

Mr. Birt: Yes, I agree.

The Chairman: What do you say, Sir Myles?

Sir Myles Fenton: Yes.

The Chairman: Then we will take the suggestions on page 2, and the replies by the companies which are detailed in the appendix, and we will run through them and see what agreement we can arrive at. The first, then, is, "That workmen's tickets be "made available for return by any train carrying third-class passengers."

Mr. Scotter: I suppose it is distinctly understood that we are dealing with *workmen's* tickets.

The Chairman: The recommendation reads, "That workmen's tickets be made available."

Mr. Scotter: We are dealing with workmen's tickets, Mr. Beachcroft?

Mr. Beachcroft: Yes.

Sir Henry Oakley: It is limited to that. The answer of the companies to that is that we cannot come under an obligation absolutely to comply with that, because there are times in the day when we are running general trains and workmen's trains also, and it is not generally convenient either for the passengers or for the workmen that they should have the right to go into any train that we may be running about the time, even though it be a third-class train. The Great Eastern, who have the largest experience in this class of traffic, have come to the conclusion that it is indispensably necessary to set aside two platforms in the evening for the purpose of carrying the workmen back, where the trains assigned to the workmen only may depart from. We, the Great Northern, have not arrived at that state yet, and practically the workmen do go back by any return train carrying third-class passengers. But we are gradually growing also, and we find the overcrowding, and without saying anything in the least degree offensive to the men, the condition in which they are after a day's work at bricklaying, or other work, is such that it rather disturbs the coats, at all events, if it does not ruffle the tempers of the other passengers. Therefore we do not see our way to come under an obligation to do this. The view we would take is that there will be ample accommodation for the workmen to return, but that their return must be provided for with due consideration to the interests and comfort of the other passengers. When the numbers are few this will be adopted, because it is the most convenient course; when the numbers are large, and the trains will be practically overcrowded, special provision will be provided for the workmen to carry them home. We recognise, of course, that that might be inconvenient to the workmen on some occasions, because the times of those departing trains must be fixed, but those special trains would be only at the moments of pressure, say between half-past 5 and 7 o'clock; probably both before and after that we should find no difficulty in allowing the workmen to go,—but that is what you may term a domestic regulation which must be left in our hands for the convenience not only of the public but of the workmen also.

Mr. Beachcroft: You hold that it would tend to a greater amount of inconvenience if the workmen were allowed to return at any time.

The Chairman: If they had an absolute right.

Mr. Beachcroft: I suppose the larger the number of workmen who desire to return probably the greater the desirability of spreading the period for their return.

Sir Henry Oakley: That is true, but you cannot spread them; the bulk of them come practically within a very short time, and that is the time when the public also are returning.

Mr. Beachcroft: I think—I may be right, and I may be wrong—that the London and South-Western have only very lately been asked—a few days or weeks ago—and have determined to extend their time for return to 12 o'clock.

Mr. Scotter: Yes, that is true.

Sir Henry Oakley: That is the time, but this does not refer to the time.

Mr. Beachcroft: Pardon me, I think that is the point rather.

Mr. Scotter: That is the point.

Sir Henry Oakley: Then I have been arguing altogether on wrong premises.

Mr. Scotter: Yes, I thought you had got wrong.

Sir Henry Oakley: So far I think you may take it that there would be no objection made to the time of return, any time after 12.

Mr. Scotter: I think, Mr. Beachcroft, we have met your point—almost all the companies.

Sir Henry Oakley: Some of us allow them to go any time.

Mr. Beachcroft: Only two really, according to my return.

Sir Henry Oakley: We need not discuss it if that is the point of this.

Mr. Scotter: That is the point.

Mr. Beachcroft: Yes, that is the point.

Sir Henry Oakley: This must be made quite clear, that it does refer to the time—the hour of the departure of the trains after some time to be agreed upon. As it stands at present it is "made available for return by any train carrying third-class passengers." That would, as I say, provoke a very great deal of inconvenience at certain times in the evening, and to that we could not agree to be bound.

Mr. Beachcroft: I understood you to say after 12 o'clock in the day.

Sir Henry Oakley: After 12 o'clock in the day, I think you may take it that the companies would offer no objection.

Mr. Beachcroft: It is almost inconceivable to think that many workmen would desire to return before 12 o'clock in the day.

Sir Henry Oakley: There need not be any discussion on that.

Mr. Beachcroft: I was only wondering why you fixed the hour at 12 o'clock.

Sir Henry Oakley: I will tell you why. It is, first of all, the general view of the companies. Our traffic varies all round, and there is no hard-and-fast line applicable to any of the companies. Twelve o'clock is all that is asked, and 12 o'clock we are willing to concede.

The Chairman: Are you willing to say this, Sir Henry ——

Mr. Beachcroft: I do not think the Council will quibble over that.

The Chairman: Are you willing to say this: "That workmen's tickets will be made "available for return by any train conveying third-class passengers after 12 o'clock."

Sir Henry Oakley: Subject to the right of the company to appoint trains where the public convenience requires it.

The Chairman: For the workmen?

Sir Henry Oakley: Yes.

The Chairman: That you would not object to, Mr. Beachcroft?

Mr. Beachcroft: No.

The Chairman: We can take this down then, as we are very nearly agreed on this—"That workmen's tickets be available for return by any train carrying third-class "passengers after 12 noon, subject to the power of the company where the "circumstances demand it to set apart special trains for the conveyance of such "workmen."

The Rev. Fleming Williams: We are to understand, then, are we, that that is a limitation of your concession that would only be imposed under very special circumstances?

Sir Henry Oakley: No.

Mr. Scotter: Which limitation?

The Rev. Fleming Williams: Your concession is that workmen may return by any third-class train after 12 o'clock.

Mr. Scotter: That is the rule.

Mr. Birt: You must not say that is *the* rule.

Mr. Scotter: That is a rule; now there are exceptions to the rule.

The Rev. Fleming Williams: There is an exception, and the point of my question is to know whether the exception amounts practically to a rescission of the rule, or whether it amounts simply to isolating one or two or two or three extra busy hours

in the evening where necessary to set apart special platforms for workmen's trains to depart from.

Mr. Birt: I do not think you must take it that the limit would be two or three hours only; the limit will have to be for that period of the day when the convenience of the ordinary passengers requires such limitation.

Mr. Beachcroft: I am afraid I misunderstood Sir Henry. I understood from him that it should be a power reserved to the company if they found it necessary to do so, to assign a special train for the conveyance of working men back.

The Chairman: That is so—that all working men at that time are to go by that train and not by the ordinary third-class train.

Mr. Beachcroft: I did not understand, and do not for a moment suppose that Sir Henry intended that we should understand that the company should have the power to say, "We will run no special workmen's train between 5 and 7."

Mr. Birt: No.

The Chairman: I am sure the County Council will understand that the Act itself does not apply to trains before 6 o'clock.

Mr. Beachcroft: Of course.

The Chairman: And that this which we are now considering is making a concession. The railway companies are making a concession, and a perfectly right one, to the opinion of the County Council and to the Board of Trade.

Mr. Beachcroft: I entirely accept that.

Mr. Birt: If the view of the railway companies generally be that these workmen's tickets should be available for return after 12 we shall fall in with that general arrangement; but I think the railway companies are making a mistake in making that concession, and that they would not make the concession if their experience had been what ours, during the last few months, has been. Some little time ago we had a deputation—I think I am right in saying that it was attended by Mr. Pickersgill—from workmen and others in the Edmonton district. They pressed very hard that we at that time should allow them to go back after 12, instead of after 4, which was the hour previously in existence. We said we had very considerable doubt as to whether we could fairly make that concession, but we will give it a trial in this way: our present rule of the return ticket not being available till after 4 shall continue, but if, experimentally, any workman desires to return after 12 he may do so upon taking 1*d.* ticket at Liverpool Street. That is the arrangement that we have been experimenting with, and which prevails to-day. Now, we find this—that 75 per cent. of the people who come to the Liverpool Street booking office and take the 1*d.* ticket are not workmen at all. We have had an intelligent fellow watching the class of people who come for the 1*d.* tickets, and he asserts most deliberately that 75 per cent. of them are not workmen at all. I say that because I understand it is a workmen's question which is being urged by the County Council.

Mr. Beachcroft: That is a question of what is a workman.

Mr. Birt: These are shopkeepers mainly.

Mr. Bruce: Are these men started by the workmen's trains in the morning?

Mr. Birt: Yes, they get the 2*d.* ticket.

Mr. Bruce: In the early hours in the morning?

Mr. Birt: Yes.

The Chairman: All of you gentlemen on that side of the table know that there is a danger.

Mr. Scotter: We know that——

The Chairman: That there is a danger that people who are not workmen should take workmen's tickets. The only safeguard that I can see against that is the time of the starting of the trains.

Mr. Scotter: I have seen several deputations of *bonâ fide* working men. The case they made out was this, that in many cases they work for half a day. It is a gross injustice that these poor fellows cannot get back to their homes until after 5 or 6 o'clock at night. Therefore we came to the conclusion that it would not be any injustice if a man availing himself of a workmen's ticket was compelled to wait till after 12 o'clock. I think generally Sir Henry has expressed the opinions of the railway companies. As I say, there may be one or two who do not take the same view, but

generally speaking the railway companies, I believe, are prepared to say that from the first of next month, or from any date which we may agree to, workmen's tickets will be available by any train after 12 o'clock—of course all trains are third-class, practically, now, and therefore it means by any train. But one or two companies reserve the right to make a reservation with regard to one or two trains. Mr. Fleming Williams will understand that there is no intention to evade the concession.

The Rev. Fleming Williams: I see.

Mr. Scotter: The limitation will be very small.

Sir Henry Oakley: I think I might add just a word to enforce Mr. Birt's statement about the use, by people other than workmen, of the workmen's tickets. A year or so ago we were applied to by the bricklayers, very much in the case put by Mr. Scotter, that men on a rainy day could not work: if they were kept in town till 4 o'clock they would go to the public-houses, and therefore it was desirable that they should have the opportunity of going home. I saw them; they were very intelligent fellows indeed, and put their case very nicely. After conferring with my directors they agreed to let these workmen go home at any time. Now, what has been the effect *qua* workmen? The workmen do not go home practically at any time; there are very few indeed—they are rare instances of the workmen going home at any time; but all the local shopkeepers come up at 6 o'clock in the morning; they buy a 2*d.* ticket; they go to Covent Garden Market, collect their produce, and go down by half-past 6, or 7, or 9, just as it suits their particular business; so that they really are taking advantage of the concession to the workmen, to which they are not in the slightest degree entitled, because many of them are well off.

Mr. Scotter: 12 o'clock will stop that.

Mr. Harrison: I think, Sir Courtenay, we have gathered that both sides of the table are practically agreed upon the advantage of the concession which has been given.

The Chairman: Then I will read it—"Workmen's tickets shall be available for "return by any train carrying third-class passengers after 12 noon, subject to the "power of the company, where circumstances demand, to set apart a special train for "the conveyance of workmen so travelling."

Sir Myles Fenton: I think we ought to carry it a little further. For instance, in the times of very great pressure, say between 4 and 6 o'clock, you may find that the pressure of the ordinary traffic is so great that you have an express to Croydon, you have an express to Bromley, or some of these places, which is filled up by the ordinary traffic, all coming back at the same time, and therefore I think it ought to be within the rights of the companies to except a train or two occasionally, if they find the general convenience of the traffic requires it.

The Rev. Fleming Williams: Yes, I think so too.

Sir Myles Fenton: The exception is that you are to run a special workmen's train. I think you ought to go a little beyond that.

Mr. Scotter: "Or excepting certain trains if in the opinion of the company it is found to be inconvenient to the general public."

The Rev. Fleming Williams: I think that would be fair.

Sir Myles Fenton: Or in the opinion of the Board of Trade.

The Chairman: What are your words?

Sir Myles Fenton: "If it is found in the opinion of the company or by appeal to the Board of Trade to be an inconvenience to the general traffic."

Mr. Beachcroft: I suppose the workmen would not have to wait more than an hour?

Sir Myles Fenton: No.

Mr. Scotter: Ten minutes or five minutes.

Mr. Beachcroft: "With," say, "liberty to the Board of Trade to exclude any particular train from the operation of this."

Mr. Scotter: That is better.

The Rev. Fleming Williams: That will do.

The Chairman: "Subject to the approval of the Board of Trade"

The Rev. Fleming Williams: Subject to an appeal or directly with your consent.

The Chairman: An appeal?

The Rev. Fleming Williams: I thought it would save time.

The Chairman: It would save time if we had only to approve in case of appeal.

The Rev. Fleming Williams: Subject to appeal; I suppose in that case the appeal would be made, if it were ever made, by the County Council.

Mr. Scotter: Or the workman; the workman can come to the Board of Trade.

The Rev. Fleming Williams: Probably you would think that it would be more convenient to have the Council act for them.

Mr. Scotter: I do not care.

The Rev. Fleming Williams: That is in relation to a later recommendation I mean, which seems to imply it.

Sir Henry Oakley: Let us see the words first.

Sir Myles Fenton: "Or to except such train or trains as may be found necessary for "the general convenience of the traffic; in case of difference the Board of Trade to "have the power to decide."

Mr. Beachcroft: I think the spirit of that quite meets us.

Sir Myles Fenton: We have other classes of passengers to deal with besides workmen.

The Rev. Fleming Williams: Quite so—it would be very inconvenient in some cases.

The Chairman: That is the first point. Now take the next.

Mr. Beachcroft: No. 2 is: "That the issue of quarterly or monthly third-class tickets be extended to all stations within the limit of the cheap train service." That is only intended to supplement the early tickets.

Sir Henry Oakley: We hope you will not press that. First of all, so far as our information goes, and we can go direct to the fountain head, the workmen do not care about quarterly tickets. They say they cannot afford the money out of their pockets at once; they have a very good chance of losing them, and, therefore, they would very much rather be content to pay daily when they want to travel, and for no other time. They are not gifted with the love of speculation. On behalf of the railway companies, we say distinctly that the quarterly tickets would prevent us from exercising any control over them, and although, as I said just now, I do not desire to stigmatise the workmen, it does so happen that there is a larger proportion of misused tickets issued to workmen than to any other class; therefore we hope that this question will not be pressed, as the companies are, I may say, unanimous in their opinion that it will not work either for the workmen or for the companies.

Mr. Beachcroft: There are three companies, I think, who have made the concession. The London and South-Western, I think, is one.

Sir Henry Oakley: They are here, Mr. Beachcroft, and if you ask them, they will tell you their experience, which is not favourable.

Mr. Scotter: The third-class season tickets are a failure with us.

Mr. Beachcroft: Have you ever tried weekly tickets?

Mr. Scotter: Yes; we have got an alternative. If Mr. Beachcroft would kindly pass that over, or withdraw it altogether, because it is dealt with a little lower down, I think we should be able to suggest something that would meet the case he is raising.

The Chairman: Do you mean to consider that on paragraph 4.

Mr. Scotter: Yes, if you please.

The Chairman: I mean to say on the question of "daily tickets."

Sir Henry Oakley: Some are selling them in packets.

Mr. Beachcroft: I do not know whether there is much need to discuss No. 3.

The Chairman: Do I understand that we postpone No. 2?

Mr. Beachcroft: I understand we postpone No. 2 until we come to No. 4.

Sir Henry Oakley: There is no difficulty about No. 3; that is advertising the issue of these tickets.

Mr. Beachcroft: No, there is no difficulty about that.

The Chairman: We understand the railway companies agree to improve their system of advertising.

A Representative: Yes.

The Chairman: I am going to ask you, gentlemen, to initial what I have here, one on each side. We are not drawing up a legal document, but I should be very much obliged if you would just initial what we are writing out as a record.

Mr. Beachcroft: It would be a very great convenience if the distances were published in your time tables.

Mr. Scotter: Take the case of Kingston, where we have two routes, one three miles longer than the other.

Sir Myles Fenton: In some cases the South-Eastern and the Brighton have three routes. There is the difficulty.

Mr. Beachcroft: I see the difficulty, but it would be a convenience if that could be done.

Mr. Scotter: Every working man knows very well the distance.

Sir Henry Oakley: We should always publish the longest, Mr. Beachcroft.

Mr. Sarle: What is your object?

Mr. Scotter: Never mind his object as long as it is withdrawn.

The Chairman: Where are we?

Mr. Bruce: No. 3 is passed.

Mr. Scotter: Agreed to unanimously.

The Chairman: Then I will take it that No. 3 is agreed to—that the conditions as to workmen's trains will be more extensively advertised—is that it?

Sir Henry Oakley: Yes.

A Railway Representative: If you adopt the wording of No. 3 it would be quite sufficient.

The Chairman: "The conditions as to workmen's tickets to be more extensively advertised."

Sir Henry Oakley: I think we can adopt the Council's words.

The Chairman: "To be conspicuously advertised by means of posters at all stations served by workmen's trains."

Sir Henry Oakley: I do not know what has given rise to the suggestion, but we never found a working man who did not know of them.

Mr. Scotter: As we agree to it, we need not discuss it.

The Chairman: Now we get to Nos. 2 and 4.

Sir Henry Oakley: So far as No. 4 is concerned, we are all agreed on that, that the workmen should have the opportunity of having a daily ticket; but I may tell you that some of us issue now weekly tickets only.

Mr. Beachcroft: Exclusive of——

Sir Henry Oakley: Exclusive of the South-Western.

Mr. Scotter: We have just adopted daily in the last few days.

Sir Myles Fenton: The daily ticket is the best.

Mr. Bolland Newton: We only issue weekly tickets.

The Chairman: What is your objection to issue daily tickets?

Mr. Bolland Newton: We have such an enormous number of workmen. We carry 5,000,000 a year, and the number is increasing at the rate of something like 20,000 a week. We have never had an application for a daily ticket. The working man has never applied for it, and in fact he prefers a weekly ticket.

The Chairman: Would you object to giving him his option?

Mr. Bolland Newton: We have not the least objection to give him his option.

The Rev. Fleming Williams: That is all we want.

Mr. Beachcroft: If I may be permitted to say so, they do not apply, because they know they cannot get them.

Mr. Scotter: No doubt.

Mr. Bolland Newton: I think it is governed by the fare.

Mr. Birt: We have recently been asked to issue these weekly tickets, and we have put them into force, issuing them of course as well as the daily ones, and the result for

the month of May was this: We issued 287,000 daily tickets, and the issue of the weekly tickets was 7,600. The men had the alternative of the daily or the weekly.

Mr. Scotter: That was for a month. That shows that the men prefer dailies.

The Rev. Fleming Williams: Precisely; I was going to say it was a good comment.

Mr. Bruce: It is 3½ per cent.

Mr. Harrison: No doubt the experience of different companies varies considerably. We issue both daily and weekly tickets, but the weekly tickets are only about one in ninety.

Mr. Scotter: That again corroborates.

Sir Myles Fenton: I do not know what Colonel Bell's experience is on the Metropolitan, but I remember that the Metropolitan were the first to establish workmen's trains. We began by having day tickets as well as weekly, and carried these on for about six months, and found not only that they were rarely used, but that when used they were so frequently subjected to fraudulent usage that we gave them up entirely, and issued the daily ticket. I think the daily ticket is the best both for the workmen and the company.

Mr. Scotter: I think, Sir Courtenay Boyle, the best course is to issue a daily ticket, but to give the man the option of purchasing the six for the week at the same time that he purchases one.

The Chairman: Or a weekly ticket.

Mr. Scotter: No, it must not be a weekly ticket. If you issue a large number of dailies, everybody must either have one or the other—he must give up something when he leaves the station.

Mr. Bolland Newton: We have experienced no difficulty.

Mr. Scotter: Because you have no daily tickets.

The Chairman: You say daily tickets should be issued, but every workman should have the option of getting——

Mr. Scotter: Of purchasing six when he takes one, as he likes—or four, or three, or two.

Mr. Birt: He does now.

Mr. Scotter: Yes, he does now. You have got a sample there. (*Handing tickets to the Chairman.*) We must have the record for the week.

The Chairman: Now, Mr. Beachcroft, do you press for monthly tickets or weekly tickets.

Mr. Beachcroft: I think for the moment we are on the question of weekly tickets. What we ask is, that they will fall into line with the other companies, and give the option of daily tickets as well as weekly tickets.

Mr. Bolland Newton: Let us get the wording of it.

The Chairman: What is the wording? "That the workmen shall have the option of daily tickets."

Sir Henry Oakley: No, put it in this way: "That every workman should be able "to take a daily workmen's ticket, but weekly workmen's tickets not to be debarred "or objected to."

A Railway Representative: No.

Sir Henry Oakley: "Or may be also issued."

A Railway Representative: Packets of tickets are issued.

Sir Henry Oakley: That is your practice. The North London has another practice. There is no difficulty; anybody may have a half-a-dozen tickets if he likes. The point the Council want to secure is that the workman shall have a daily ticket. That we agree. Now, then, it is not to debar the companies having the right to issue weekly tickets, either in packets of six, or by a ticket, as the North London.

Mr. Scotter: "In addition"; that is right.

Mr. Beachcroft: That is right.

Mr. Scotter: That is, the company to have the option.

The Chairman: That every workman should be able to take a daily workman's ticket, but weekly workmen's tickets not to be debarred.

Mr. Scotter: I do not like "debarred."

The Chairman: The issue of weekly tickets to be in the discretion of the company.

Mr. Scotter: That is it. "The discretion of the companies."

Mr. Harrison: Would you put it, "The issue of tickets to cover a week's journeys "to be in the option of the company."

The Chairman: The issue of a ticket or tickets to cover the week's journeys to be in the discretion of the company.

Mr. Bruce: Have the word "also" put in.

Mr. Beachcroft: The first part of the question is a positive affirmation, namely, that daily tickets should be issued to a workman. If that is first agreed, then you can go to the question of periodical tickets; but I should suggest that we should first of all adopt, as a principle, what I have just now mentioned, namely, that daily tickets be issued.

Sir Henry Oakley: That we agree to.

The Chairman: It is being copied out. As soon as it is copied out, we will discuss the precise wording of it. Now No. 5.

Mr. Beachcroft: We have not quite settled the question of periodical tickets or monthly tickets:

Sir Henry Oakley: Cannot you handsomely withdraw that?

The Chairman: Having got your daily tickets and your weekly tickets, cannot you leave your quarterly and monthly tickets to be a question of supply and demand? Is it necessary to regulate the supply and demand sitting here? If there is a demand for monthly tickets or for quarterly tickets, you are pretty sure what the companies will do.

Mr. Beachcroft: Of course, I am aware that the question of quarterly tickets rather strikes at a superior class of workman—I admit that. And I also admit this, and those round the table will perhaps understand me when I do so, that we have to consider in these days not only the pure workmen, but also that class just above the workmen—the girls, and so forth.

The Chairman: Mr. Beachcroft, we here have been a little shy through negotiations of ours of extending the scope and the intention of the Legislature in carrying out the Act, which is intended to apply to one class of the community, to a totally different class.

Mr. Beachcroft: It seems to have had a somewhat larger interpretation during the last 18 months.

The Chairman: I am perfectly well aware of that, and I perfectly appreciate your motives and perfectly admit them, but we must be a little bit careful about it. I put it to you then, as regards the quarterly tickets, may not that be left to the ordinary laws of supply and demand and to take care of itself?

Mr. Scotter: There is not one workman in 10,000 who would take them—not one in 20,000—not a *bonâ fide* workman.

Sir Henry Oakley: Without limiting myself to numbers, from the best information I can obtain, that is the clear view of the working classes—they do not want quarterly tickets for the reasons I have just given.

Mr. Scotter: Nor monthly.

Sir Henry Oakley: I cannot speak for the monthly tickets.

Mr. Scotter: They cannot afford to lay out their money.

Mr. Leon: Would the companies object to third-class ordinary tickets?

The Chairman: There are third-class season tickets, are there not?

Mr. Leon: No——

The Chairman: That is outside the reference. I do not think it is in our present reference.

Mr. Beachcroft: I think, on behalf of the Council, that I shall withdraw that.

The Chairman: "All workmen shall be able to take daily workmen's tickets, the "issue in addition of a ticket or tickets to cover a week's journeys to be in the "discretion of the company."

Mr. Scotter: Then I suggest that the County Council withdraw No. 2 absolutely.

Mr. Beachcroft: Yes.

Sir Henry Oakley: Of course you do not ask us to issue workmen's tickets on a Sunday, because we do not run workmen's trains on Sundays?

Mr. Scotter: Nobody asks that.

The Rev. Fleming Williams: That is so; it ought to be stated.

Mr. Scotter: Do not put anything in about Sundays, because they come on Sundays to buy them.

The Chairman: I am asked to put in: "All workmen shall be able to take daily workmen's tickets on week-days."

Mr. Scotter: Yes.

Mr. Leon: There is no objection to the companies selling on Sundays, I presume. I understand the South-Western does sell them on Sunday evenings.

Mr. Scotter: I can assure you that at Clapham Junction and some other places the men come on Sunday night to avoid being so early on Monday morning. If we are ready to issue them why should we be restricted.

The Chairman: Will you consider it as it is drafted, "That all workmen shall be "able to take daily workmen's tickets on week days"; it does not say that the company may not issue on Sundays.

Mr. Scotter: All right.

The Rev. Fleming Williams: Only it excludes their use on Sundays.

Major Marindin: Put "for" instead of "on."

Mr. Beachcroft: No. 5 raises a very important question. It is a very important one indeed from the point of view of the companies, namely, in effect that the time of arrival in London of workmen's trains be extended up to 8 o'clock. There is a very great feeling in favour of that. The Great Eastern, I know, recognise the feeling on their line, because I know that a large deputation waited upon them urging the question that the Great Eastern should extend their time up to 8. The Great Eastern, on the other hand, issue half-fare tickets which run up to, I think, 8.

Mr. Birt: From 6.40 to 8.

Mr. Beachcroft: To a certain extent that might be said to meet the objection. The general prevailing feeling is that the time should be extended up to 8 o'clock. I understand from the objections that have been put in that there are only two objections. One is from the London and South-Western and I think the other is from the London, Brighton, and South Coast. Those are the only two companies, I think, who object to the proposal.

Mr. Birt: We all object.

Mr. Scotter: I beg your pardon, we do it.

The Chairman: The London and South-Western have done it. It is just the converse.

Mr. Scotter: You have done me an injustice.

The Chairman: Now let me hear you on that, Sir Henry.

Sir Henry Oakley: The objection to any extension of the hours on the low-priced workmen's tickets is so strong as to be almost insuperable. The object of this half-price ticket we have established, which the Great Eastern and one or two others have established, was to separate the services, to spread the people. The earlier we could get them the better. Therefore the workmen's fares were made as low as we could carry them, and then to suit those who are not so well off in this world's goods as the people who came later, we established the half-fare between 7 and 8 o'clock. That provided for the warehousemen and the little better class of workmen in, what shall I say—in above the actual artizan or labourer. If you lengthen the hours we believe you will render it almost impracticable to carry the traffic, because many of the workmen would, I have no doubt, come at the later hour. These trains are now as busy as they can hold. Mr. Birt will tell you presently that between 8 and 9 in the morning he can hardly carry the traffic now. I can speak for the Great Northern. That is our condition. We have got into this condition, that not only we cannot carry the traffic, but we cannot increase the number of trains. We are absolutely running between that hour trains every two or three minutes, and they are all crowded, sometimes with 12 to 14 people in the compartments. They will not wait. They will not admit of anything like moderation. They utterly disregard the capacity of the trains, and they simply tumble in one over the other, determined to go by the first train as

soon as they are on the first platform. If you add to that an additional number who are now carried by the early trains you will render our work impracticable. We are strong, therefore, on all grounds that we cannot entertain that for a moment. You will simply bring the whole thing into hopeless confusion.

Mr. Beachcroft: That is to say you could if you would.

Sir Henry Oakley: No.

Mr. Birt: Do not say that.

Sir Henry Oakley: I can speak for things as they are. We have got four lines bringing these passengers into town in the morning, and I tell you there are trains about every three minutes, and we dare not run more. They carry from 470 to 500 in the train. Mr. Birt has a larger experience.

Mr. Birt: I endorse all that has fallen from Sir Henry Oakley, and I should like to say this: That the Liverpool Street Station at certain hours of the day cannot possibly admit more trains. We are now spending a little short of two millions of money in enlarging Liverpool Street, in widening between Bethnal Green and Hackney Downs, and in laying down two more lines between Bow and Ilford. Those three works will cost just under two millions. That money has been spent in the hope that we shall get an earning on it. If this proposition and a further one bearing on the same subject——

Sir Henry Oakley: (G.) on the next page.

Mr. Birt: Were to be adopted, the Great Eastern Railway Company might just as well have thrown their two millions of money into the Thames, because they could not under the state of things proposed here hope to get one penny return for it. The biggest hour we have in the day is from 8 to 9, that is 14,000; the next biggest is from 9 to 10, which is 11,000, and the next is just before 8, when the number, speaking from memory, is something like 10,000. I assure you, gentlemen, that your propositions are absolutely out of the question, if the Great Eastern are to get one penny return upon this large outlay.

Mr. Beachcroft: Other lines, of course, do run their trains now after 8—I think the London and South-Western runs after 8.

Mr. Scotter: Up to 8.

Mr. Birt: You are aware that we already do run the half-fare trains up to 8, and we are willing to continue that. May I submit this—to labour a point rather touched upon by Sir Henry Oakley: Anything that the County Council, or the Board of Trade, or anyone else may do which will have the effect of concentrating the traffic within a limited time, is a great blunder in the public interest. Our constant thought at Liverpool Street is to see how we can spread the traffic, and get it over several hours of the day instead of concentrating it at one hour, as would be the case, undoubtedly, if these propositions were adopted.

Mr. Beachcroft: I have got on my note that the South-Western run one train as late as 8.40. I only mention that.

Mr. Scotter: I am sure you do not want to be wrong; there is one train that leaves some particular place, but, of course, there is no other.

Mr. Beachcroft: There is a train that leaves Earlsfield.

Mr. Scotter: No.

Sir Henry Oakley: But is not 7 o'clock, or 6.40, whatever the hour, a reasonable time for the workmen?

Mr. Beachcroft: Some of the workmen complain that they have to wait in London for an hour, or sometimes more than that, before their office or shop is open.

Mr. Birt: Then I submit they are not the class of workmen whom Parliament brings within the term of workmen.

The Rev. Fleming Williams: At your own station at Liverpool Street almost any morning between 7 and 8 o'clock you would see a very large number of working people and of working women waiting about on the platform and in your waiting-rooms to go to business at half-past 8 perhaps, or 8 o'clock. If there was any possible way of limiting the concession to that class it would meet the objection which I, and a good many others, feel to your present limitation.

Mr. Birt: Your view is to be very highly commended; let it be carried out if you like, but not at the expense of the Great Eastern Railway Company—we cannot afford it.

Mr. Beachcroft: I think I am right in saying that the Great Eastern Railway Company have lately, in consequence of the representations made to them, made extra provision at the terminal station, in order to give a sort of house-room to those who are obliged to wait about.

Mr. Birt: Perhaps I had better tell that story. Many years ago we did allow our waiting-rooms to be opened upon the arrival of the early workmen's trains, but we found that the workpeople coming up by those trains used to bring red herrings, and fish of all sorts, and cook them in these waiting-rooms, and quietly sit down there and enjoy their breakfasts, leaving these waiting-rooms in such a condition that the ordinary passengers did not care to use them afterwards. We said we must think of the other passengers that we carry, as well as of the workmen, that that use of the waiting-rooms by the workmen was not a legitimate one, and that therefore the waiting-rooms must be closed. But upon its being urged upon us the other day that the waiting-rooms should be opened again we said we would try the experiment, and we hoped with better results than the first experiment; and they are opened.

Mr. Beachcroft: And you are the only company that have issued half-fare tickets?

Sir Henry Oakley: No, we issue them.

The Chairman: Several companies issue half-fare tickets.

Mr. Beachcroft: I say if it is impossible to carry out what I venture to say are the Council's strong views on the subject of the hour being extended, the middle course is to suggest that all companies should have half-fares.

The Chairman: Would it be possible to get an agreement on this basis—that the workman's ticket should be for trains up to——

Mr. Birt: 6.40.

The Chairman: 6.40 or 6.50—say 6.45, or do not let us attempt to fix the time now. Say that all trains up to x should be workmen's trains, and all trains up to y should be half-fare trains.

Mr. Beachcroft: That is what I am trying to meet.

Sir Myles Fenton: I am afraid, Sir Courtenay, I could not agree to that.

The Chairman: No agreement on that?

Sir Myles Fenton: No, my only feeling about it is this—that the circumstances of each company are entirely different. I think each company's case ought to be dealt with on its merits or demerits. I do not believe you can fix a hard and fast rule. Our case on the south of the Thames is rather a peculiar one. The Brighton will speak for themselves, but I think theirs also is one that ought to be carefully considered. The broad proposition as it stands here to extend the time to 8 o'clock means a loss to the South-Eastern Company, we calculate, of something between 10,000*l.* and 15,000*l.* a year. We do not see any necessity for it. There has been no outcry for it. We have never had any application made in this direction and we think it is rather hard that a hard and fast rule should be applied to us where the circumstances do not warrant it. We are quite prepared to consider the question, and, if an appeal is made to the Board of Trade that we should do certain things and so on, to come to the Board of Trade and state our case, but as far as we are concerned I think we must ask not to be bound down by a hard and fast rule. We are quite anxious to meet the workmen as far as possible, but of course there is a reason in all these things and we have the two sides of the question to consider—not only the workman but the poor shareholder as well.

The Chairman: What do you say, Mr. Sarle?

Mr. Sarle: I had a return made out for three days in the week and I find that if the time of workmen's trains be extended up to 8 o'clock we should lose between 8,000*l.* and 9,000*l.* a year by it.

The Chairman: But the suggestion just now is that the workmen's trains should be extended up to 6.50 say, and that up to 8 should be half-fare. Sir Myles does not see his way to do that.

Mr. Sarle: Nor I, either, for I think we should lose a very large portion of the 8,000*l.* or 9,000*l.*

The Chairman: On the other hand, the South-Western go the full way.

Sir Myles Fenton: Their case may be different to ours, sir.

Mr. Scotter: May I say a word. We have adopted a course which is really carrying out what the Council suggest, but then our circumstances are different to those of other companies, and I recognise just as much as Sir Myles Fenton and the others do that what may pay the South-Western may be a serious loss to those companies. I am strongly of opinion that as the Board of Trade at present have power to deal with those identical questions, if on representation to them and on the answer of the companies they decide, they can make an order to-morrow upon any company to run an additional train. I think the subject ought to be left there where it is.

Sir Henry Oakley: That is hardly the question. The point is whether the companies can agree to extending the half-fares between 6.40 and 8 o'clock.

Mr. Scotter: We charge the same workmen's fares between 5 and 8.

Mr. Sarle: We will do it if we can get any concession from the Government—by relinquishing the Government duty, for instance.

Mr. Beachcroft: This question is raised later on in paragraph (g).

The Chairman: As the law stands at present, we can say that a particular train must be a workmen's train. Practically, that is what it comes to.

Mr. Sarle: We are quite agreeable to make all trains arriving in London up to 7 o'clock workmen's trains, if that meets the County Council's views.

Mr. Leon: I understand the Brighton Railway does do so up to half-past?

Mr. Sarle: One or two trains.

The Chairman: If you are going to make a rule, you must make it the narrowest rule, of course.

Mr. Beachcroft: The object—the main object, I might almost say—of the County Council is to get through your instrumentality something in the way of uniformity.

The Chairman: Then I must say something upon that. I have been sufficiently long connected with this department to know that you cannot have absolute uniformity —that the circumstances do vary so enormously that what is fair for one company is not fair for another.

Sir Henry Oakley: The circumstances differ so much, Mr. Beachcroft. Let me put this. Our traffic, for example, is simply suburban, up in the morning and down at night. The North London, the Metropolitan, and the Metropolitan District, is altogether a different class of traffic; and the Great Eastern very largely so.

Mr. Beachcroft: We wish to see the working men spread about the suburbs instead of being practically conveyed, as they are, almost entirely at present by one or two companies.

Sir Henry Oakley: I think we could see by your suggestions that that was what you wanted.

The Rev. Fleming Williams: And we think immensely ultimately to the gain of the companies.

Sir Henry Oakley: Just on that Mr. Birt could give you some more interesting experience of the effect on his other traffic of the establishment of workmen's villages near to a station.

Mr. Birt: When we come to the point, I shall want to say something of our Loughton line. We have got, roughly speaking, something like 11 different suburban branches very near to London, practically the whole of those have been given up to working men, except one——

Mr. Beachcroft: Might I be permitted to say a word here? I shall leave the return——

The Chairman: Mr. Birt is rather going into the next question, I think.

Mr. Birt: I was answering the point that we were on.

The Chairman: I think you were going to the next question.

Mr. Beachcroft: I am referring to the return furnished by the Council. It has not, up to the present time, been criticised adversely, and therefore I think I am entitled to assume that the figures are accurate. On page 48 I give the time limits of the workmen's trains. I am corrected with regard to the South-Western, and I am told that the time should be 4.35 to 8—not 8.40.

Mr. Scotter: No, I do not say that. I say there is one train after that, I know. You can take that as correct.

Mr. Beachcroft: The South-Eastern is from 4.55 to 6.50; the London Chatham and Dover from 4 o'clock to 7.45——

Sir Miles Fenton : Those are not for all trains.

Mr. Scotter : Just the extreme limits, the first and the last.

Mr. Powell : Are these departure trains or arrival trains ?

Mr. Beachcroft : Arrival. The London, Brighton, and South Coast is from 4.51 to 7.28 ; the London, Tilbury, and Southend from 4.45 to 8.6 ; Great Northern, 4.45 to 8.

Sir Henry Oakley : You must bear in mind there——

Mr. Beachcroft : That includes the half-fare, and the Great Eastern, too. The Metropolitan run from 5.28 to 8.14 ; the North London from 5.16 to 8.1 ; the London and North-Western frm 5.15 to 7.36 ; the Great Western from 5.15 to 6.45 ; the Metropolitan from 5.15 to 6.58. I have read that, because, gentlemen, on the other side of the table will see that, if you are going to limit it, as I think Sir Courtenay suggested, to 6.50, you will be reducing the present time limit, and giving nothing in exchange for it.

Mr. Sarle : You are only alluding to the workmen's trains ; for every workmen's train there are five or six ordinary trains.

Mr. Birt : That return is not accurate, if by workmen's trains you interpret the twopenny trains. It is only correct by your interpreting the workmen's trains as embodying the half-fare trains.

Mr. Scotter : He said so.

Mr. Birt : It is important.

The Chairman : That is quite clear. There is a note here, that in your case it includes trains available by half fare. Your point, Mr. Beachcroft, is, that if you fix 6.50, you will be fixing practically the earliest time, and there would be no concession at all.

The Rev. Fleming Williams : It would be a distinct loss.

The Chairman : It would not be a loss, because the other trains would still be workmen's trains.

Mr. Beachcroft : I do not say every train is to run up to that time, but I say trains should run up to that time, according to the requirements of the workmen. There may be some who want to arrive at 6.50, and others who want to arrive at seven. I say there should be trains that run up to the extreme limit, whatever that limit may be.

Sir Myles Fenton : The Board of Trade have power now to say upon application whether it is reasonable that a train should be run or not.

Mr. Beachcroft : The object of our interview to-day is rather to thresh out these points.

Sir Myles Fenton : I quite understand that ; but you cannot make a hard and fast rule for all the companies.

The Chairman : I think you might make a hard and fast rule up to 7 o'clock.

Sir Myles Fenton : Do you mean arriving at 7 o'clock.

The Chairman : Yes.

Sir Myles Fenton : I should not object to arriving at 7 o'clock.

Mr. Birt : Do you mean including half fares.

The Rev. Fleming Williams : No ; the cheap twopenny trains.

Mr. Birt : We could not agree to extend our 6.40 train to 7 o'clock.

Mr. Beachcroft : 6.47 is your latest.

Mr. Birt : We cannot extend that.

The Chairman : Have you got any train that arrives at 7 o'clock which is not a workmen's train ? Have you got any train arriving between 6.47 and 7 which is not a workmen's train ?

Mr. Birt : Yes, a half-fare train.

The Chairman : What would be the objection to making that particular train a workmen's train ? It is a question of one train.

Mr. Birt : It is all very well, Sir Courtenay, for gentlemen to talk in this light manner——

The Chairman: I am sure Mr. Beachcroft is talking most moderately.

Mr. Birt: Still he must remember, if you please, that the Great Eastern Railway Company is a poor one. We are only paying already a dividend slightly in excess of 2 per cent.

Mr. Beachcroft: Do your workmen's tickets pay you.

Mr. Birt: Pay what?

Mr. Beachcroft: Do you get a profit out of your workmen's tickets.

Mr. Birt: It is not a question of whether we get a profit or not. The question is, we have got a large capital, and the interest that we pay upon that is something—a trifle—over two per cent. We can do nothing that will reduce our revenue; if the fares are pulled down in one direction, the fares in another direction will have to go up. We have done already, Sir, such a large amount of work in favour of the British workmen, that we are not prepared to go beyond it.

The Rev. Fleming Williams: I think the Council has always recognised the very distinguished position your company occupies in the matter of trying to make concessions to the workmen, but this is not a very large concession, surely.

Mr. Birt: I think you must allow the Great Eastern Railway Company to determine their own train and fare arrangements, subject to any reasonable requirements that the Board of Trade has the power to make upon us. We have gone far beyond that, and we say that we have gone to the utmost limit; we cannot go further.

The Rev. Fleming Williams: If that is the position your company takes, of course that settles the question so far as we are concerned, except in the direction of another attempt.

Mr. Birt: No doubt.

The Chairman: I should have been glad if the railway gentlemen could have seen their way to agree to this resolution altering the words "8 a.m." to "7 a.m."

A Railway Representative: I think that might be conceded.

Mr. Birt: It raises another question, if you will allow me to say so. Does that mean that all the trains arriving off our Loughton line are to be workmen's trains. There are no workmen's trains upon that line at the present time. We have given up more or less the whole of the branches to the workmen, and we do ask for the right to keep that Loughton line for the better class of people. You gentlemen may not know that the other districts ——

The Chairman (to the Representatives of the County Council): You do not mean it to apply to that case. I think it does technically, and therefore we will alter that. Surely you will alter it. It is reasonable that upon one of its roads a railway company will say, "Upon this road we will not run any workmen's trains, because it is for the "better class of people."

Mr. Scotter: Let it be "Trains passing stations where workmen's tickets are issued."

The Rev. Fleming Williams: That will do.

Mr. Birt: This will want altering, "All third class trains from stations where "workmen's tickets are issued up to 7 a.m. to be workmen's trains."

Mr. Leon: That is not to prevent railways which already run trains to a later hour?

The Chairman: No, this is fixing a minimum. There is no reason why we should fix a maximum.

Sir Henry Oakley: I very strongly deprecate it, because I know every later moment I run these workmen's trains, the greater difficulty I shall be in those minutes. It is not a question of money, it is a question of practicability.

The Chairman: How many trains are there before eight which are 2*d.* trains?

Mr. Beachcroft: I think it might help the matter if I say this at once for those who are here to-day representing the County Council, of course I cannot speak for the County Council. As far as those who are here to-day are concerned we could not accept that. You are acting as arbiter, and at this meeting we could not accept that. I would rather not accept the proposition now which has come from the chair that the companies should agree that 7 o'clock is the minimum period at which the trains should arrive at the terminus. I cannot accept that. Eight o'clock is what we asked for, and I would rather things remain as they are and no agreement be come to, than accept that which to me would be not even a compromise.

Sir Henry Oakley: I think that settles it.

Mr. Beachcroft: I cannot agree to that.

Sir Henry Oakley: I understand that. I think the longer experience we have we shall in time even convince you that a thing of that sort is not practical. We are growing every day. According to your own return this is a thing that has jumped up from seven millions to eighteen millions in ten years—rather more than double, and there are physical limits to our capacity for carrying.

Mr. Beachcroft: As you start the argument I will not say more than this: Of course I feel the force of what you say, but on the other hand you will also feel perhaps the force of what I am going to say. Empty first-class carriages naturally are run at a loss; for every train run with full third-class ones the profits of the metropolitan companies would, of course, be proportionally large.

Sir Henry Oakley: If they do it all day and all night, but, unfortunately, it is only between such a very short time that we have not the means of making a profit.

The Chairman: I think we must agree to differ—in other words, to say upon suggestion 5: "No agreement can be come to; better leave it to the discretion of the Board of Trade."

Mr. Leon: Take it later on, and take each line on its merits with regard to the particular time. Of course, some lines evidently can do it, and are willing to do it, and do it.

The Chairman: Of course, each line must be left to its merits, and then there is always an appeal to the Board of Trade as regards a particular line and the particular shortcomings of that line under the Act itself.

Sir Henry Oakley: We would rather adopt that view for this reason, we think we have been remarkably virtuous. We have no obligations at all, and yet we have provided these accommodations for these workmen, as they increased in number. We added a train not very long ago. I think if you will leave us alone we shall not be found wanting.

Mr. Birt: May I be allowed to say one thing more in order that these gentlemen may have it upon their minds. It is an additional reason why we should not agree to what is now suggested, that is, that all trains up to 7 o'clock should be 2*d.* trains. We have recently put on, at the request of the residents at Wood Street, a train leaving Wood Street at 4.5 in the morning. They were quite willing to pay half-fares, and half-fares are charged by that train. There can be no reason whatever why those half-fares should be pulled down to 2*d.* Again, we have run for some years an early train from Enfield, leaving there at 4. That is termed a market train, and by that train we charge half-fares. Under the proposition now made the half-fares would be pulled down to 2*d.* I merely mention those two instances.

Mr. Beachcroft: We have considered it very carefully. The next point is No. 6.

The Chairman: "That all third-class trains from London termini up to 7.30 a.m. be "also workmen's trains throughout the same area."

Mr. Beachcroft: We only mean by that the trains that are run; we are not suggesting special trains.

Sir Henry Oakley: Do you mean the half-fare, because we do that already?

Mr. Beachcroft: I am not aware of half-fare trains.

The Chairman: "That all third-class trains from London termini up to 7.30 a.m. be "also workmen's trains throughout the same area."

Mr. Beachcroft: That is to say, the workmen shall be allowed to travel by any train which leaves up to that time. You see, there are workmen who live in one part of London, and are, perhaps, working outside it.

Sir Henry Oakley: They are very few in number.

The Chairman: Then it will not hurt you.

Sir Henry Oakley: If you were to make those into workmen's trains, the little money we get from those who do travel down in the morning would simply be halved without any real good being attained.

Sir Myles Fenton: As I understood, the object of these workmen's trains was to diffuse the working classes over a larger area; the result of this would be to keep them in the smaller area. With regard to those workmen who go down by these trains in the morning, they are men who receive very high wages, and whose fares, as a rule, are paid by their masters. They are not at all the working classes intended to be accommodated by the workmen's trains—they are an entirely different class of men.

Sir Henry Oakley: We do charge the half fare up to 8 o'clock for all the down trains in the morning. We have never had a complaint, in fact, they were more than grateful. Some of my friends say that it was unnecessary, that there was no demand for it. It is a fact that there is no demand. They are very few. Do not press us beyond what we have really done voluntarily.

The Rev. Fleming Williams: How do the other companies stand in that matter?

Sir Myles Fenton: We run certain trains down to Woolwich Dockyard.

Mr. Beachcroft: The Metropolitan have conceded it, I know.

Sir Myles Fenton: The Metropolitan is an entirely different thing.

Mr. Scotter: I think you had better withdraw this.

Mr. Beachcroft: It is not a point which we desire to press, and as there is great objection to it I beg to withdraw it. It is not a very important matter.

The Chairman: The seventh is "That when insufficient third class accommodation "is provided in a workmen's train the holder of a workmen's ticket be allowed to "travel by a superior class without extra charge."

Mr. Beachcroft: I will not argue that.

The Chairman: Then we will leave that as it is.

The Rev. Fleming Williams: There are cases of very great hardship at times when workmen find they cannot get into their own class, and are driven into one of these superior classes. They are often threatened with proceedings if they do it.

Mr. Scotter: They are never proceeded against.

Mr. Bruce: Does not the Metropolitan lock them up. I had occasion to travel very early and I was locked in.

Sir Myles Fenton: We endeavour to keep the classes as much separate as we can, and we have never prosecuted a single workman in practice.

The Rev. Fleming Williams: We suggested that we should withdraw that.

The Chairman: I think that had better be withdrawn. If the County Council had sat, as I have in this chair, and heard the violent complaints from persons travelling first and second class at the intrusion of third class passengers, they would see the extreme difficulty of issuing any regulation on that subject. I think we must let that take care of itself.

The Rev. Fleming Williams: Do you agree to that, Mr. Beachcroft?

Mr. Beachcroft: Yes.

The Rev. Fleming Williams: Then let us excise it.

Mr. Beachcroft: The crux generally lies in the next. I am afraid this No. 8 is a matter that will take some little time. The question of zones has already been, to a certain extent, conceded by one of the companies present, and, of course, it forms the basis of Sir Blundell Maple's Bill. The Council are not in favour of Sir Blundell Maple's Bill in connexion with the question of zones, and they have put out with some diffidence, and yet with some hope that their views would be considered, a suggested zone system, which, I think, you will find in the report to which I have alluded.

The Chairman: I should be glad to know which your zone system is; is it on page 2 or page 3?

Mr. Leon: Ours is the *3 zone system as against the †4 zone system of Sir Blundell Maple.

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* 3. Zone system suggested by the Public Health and Housing Committee of the London County Council:—

Zone.	Zone radius—Miles.	Mean distance of zone double journey—Miles.	Zone tariff for double journey.	Mean rate per mile of mean double journey.
First - - -	5	6	1½*d.*	0·250*d.*
Second - -	12	17	3½*d.*	0·205*d.*
Third - - -	20	32	4½*d.*	0·140*d.*
		Mean rate per mile - - -		0·200 nearly.

† 4. Zone system suggested in Sir Blundell Maple's Bill, which is intended to extend the Cheap Trains Act of 1883, provides for the issue of daily tickets at zone tariffs for the double journey, as follows: (1) up to 5 miles, 2*d.*; (2) up to 10 miles, 4*d.*; (3) up to 15 miles, 6*d.*; (4) up to 20 miles, 8*d.*, by all trains reaching London termini up to 8 a.m.; the tickets not to be available for return before 5 p.m. on day of issue, or 12 noon on Saturday.

The Chairman: And yours is on page 2 of this white paper?

The Rev. Fleming Williams: Yes.

Sir Henry Oakley: That is as we understand it.

The Rev. Fleming Williams: That is so, page 2 of the white report.

Mr. Beachcroft: You will appreciate at once that the principle on which the Council have gone is to endeavour to reach a sort of mileage rate, and in order to carry out that view in the first instance they considered what is the present mileage rate of the various railways in London running workmen's trains. Rightly or wrongly, I believe rightly, we find that ·32 is now the mean rate of all the lines. The difference between the companies is something very remarkable indeed. The minimum varies, I find, from ·093 to ·242, and the maximum varies from ·333 to ·727; that is to say, the minimum varies from the tenth of a penny to the fourth of a penny, speaking roughly, and the maximum from a third of a penny to two-thirds of a penny.

Sir Henry Oakley: Is that shown anywhere?

Mr. Beachcroft: I am collecting these from the red reports which have been issued to you. This is merely a collection really from the red reports. I will take the case of an individual company. I will take one case—the Great Eastern Railway, for instance. Its minimum is ·093, and its maximum is ·478. The percentage of difference is 514, which, of course, is a very large percentage of difference. We think it would be in the highest degree desirable, not only in the interests of the working men, but also in the interests of the companies themselves, that some uniformity should be reached as regards the actual mileage rate with regard to workmen's tickets. We put out a zone system, which we think, at all events, deserving of the consideration of the companies, and deserving also of the consideration of the Board of Trade. We have selected three zones as preferable to the four zones suggested by Sir Blundell Maple, for the reason that we scarcely think it likely that working men would spare the time to go out so far as he proposes, and that our third distance is, practically speaking, the extreme to which a working man could travel. I do not desire to labour the question, because the papers are before the representatives of the companies; I would merely invite their consideration.

The Chairman: May I ask you to say one word before the companies answer it. How do you answer this point: that if we had a zone system adopted deliberately and fixedly, the man just outside the small zone would pay a considerably higher fare than the man just inside, and that it would be something approaching to a preference?

Mr. Beachcroft: Probably he would measure his residence accordingly. The same remark might apply to the present, what I call, station fares. A man might be exactly in the same position who lived exactly outside the station.

Mr. Scotter: But all fares are based on mileage now.

Mr. Powell: Take the Mansion House to Gloucester Road, 4 miles 45 chains, that will come under the 1½*d.* charge. The next station, Earl's Court, is 5 miles 10 chains; that will come under the 3½*d.* charge—how can you deal with traffic under those circumstances? People who want to go to Earl's Court will obviously save 2*d.*, and book to Gloucester Road; that is the obvious consequence of the zone system as applied to short distances.

The Chairman: And walk the rest?

Mr. Powell: And walk the rest of course.

Sir Henry Oakley: No, he would not do that. He would take a ticket to Gloucester Road, go by train to Earl's Court, give up the Gloucester Road ticket, and leave you to get the money if you could.

The Chairman: You must not impute those motives.

Sir Henry Oakley: It is a thing that is done every day, as when my turn comes I will tell you.

Mr. Beachcroft: I think it is perfectly clear that there would be a case of that kind occur over and over again. Until the zone system has had time to operate, of course there must be individual difficulties, such as that already hinted at, but I do not think that is a reason against the adoption of a zone system. At all events, a zone system has been proposed from so many different sources. The Metropolitan District have proposed it now, the Metropolitan has got it in force, and there are sundry Bills in Parliament constantly appearing, all of which are based upon the proposition of a

zone system. Of course it is open to and competent for any representative of a railway company to say the zone system would be hopeless with regard to all the railway companies. It may be that the Board of Trade may recognise in certain cases that it would be impracticable to put it into operation; but, as regards a large number of the companies, I cannot but think, although having little personal experience, and only from what I have read and seen, I cannot but think that a system such as I have suggested, and such as the Council suggests to you, is one which would ultimately operate with very great satisfaction.

The Chairman: Now, Sir Henry.

Sir Henry Oakley: I have very strong, and we think very sound, objections to it. The obvious objection is that pointed out first of all by Sir Courtenay, and then by Mr. Powell, that there are some cases now where the fares are lower than even on this low scale would be charged under the zone system. As a matter of practice, the Great Northern, for example, and other companies do the same—they have two or three stations on two or three lines, all serving the same district. That is to say, taking our main line, our Enfield line, and our Highgate line, we issue now a ticket which affords a man the opportunity of going by either of those three lines. Suppose he lives on the western side, he can go either by Wood Green, or Muswell Hill, or Winchmore Hill, or East Finchley. That gives him the opportunity of a double service of trains. Would he enjoy that under the zone? If he did, his zone would be the longest. Now his fare is fixed by the shortest. Our experience is distinctly that each station has its own zone. The fare is fixed to and from the station, and the man knows what he has got to pay, and there is no hardship, because from a station beyond a man travels at the same rate, or from a station a very few miles short of him a man travels at a very much less rate. The fares are proportionate throughout. As far as we can, we group the stations for the reason I have given to you, so that at Finsbury Park a man has the choice of three stations—Finsbury Park, Crouch End, and Harringay. He can go to either of them by the first train that goes there, so that he really has, in effect, the choice, in that case, of two trains; in the case of Wood Green, he has the choice of three trains, and his fare is calculated on that shortest route. In the way he gets all the advantage that a zone can give him, with the opportunity of three roads. If I were to set that out as a question of zone I should naturally charge him by the longest route; that would be his zone, and he consequently would have to pay more. I do not see any ground or any reason for the establishment of a zone for these short distances.

Mr. Beachcroft: But what is the difference between a group of stations at a common fare and a zone?

Sir Henry Oakley: I do not think there is any.

Mr. Birt: We do not do it.

Sir Henry Oakley: I think you should rather look at it as being a very liberal view in aid of the passenger, but it is also in aid of the company, because it does what we are always striving to do, namely, to spread the people over as many trains as we possibly can so as to avoid concentrating them either on the main line trains or on either of the other line trains. That is the advantage of it.

The Chairman: Which is practically met by what you are being asked to do—you establish a zone only with this difference.

Sir Henry Oakley: I establish a zone in which three stations serve one district.

The Chairman: You group your district having three stations in your group, and it is practically a zone under a different name.

Mr. Powell: But it is dependent on the circumstances of the locality—it is not a rigid zone regardless of the circumstances. So far as the stations are concerned, they are grouped with reference to the circumstances.

Sir Myles Fenton: Each company, I think, tries to adapt its workmen's fares to the particular circumstances of each place. For instance, we adapt our fare to Woolwich, having regard to the class of workmen, and the class of people, and the general circumstances of Woolwich. We adapt Maze Hill, Greenwich, and Westcombe Park—they are grouped together as it were; it has no particular zone, but the circumstances apply exactly similarly to those three places, and the fare is the same. Again, you go a little further on to Abbey Wood, Belvedere, and Erith. Erith is a place where there is a large number of workmen, and so on, and there, again, we make the fare to Erith, say 6*d.*, and the other fares to Abbey Wood and Belvedere naturally fall into the Erith fare. But these fares are fixed by the circumstances of the traffic, by the requirements of the workmen at these particular places. I do not see how you are to get one zone

rule to apply to all the companies. The circumstances of the Metropolitan and of the Metropolitan District are entirely different to those, say of the South Eastern Railway, who have spent from four millions to five millions sterling in bringing the railways into the very heart of London. All these matters are subjects which I think ought to be carefully considered when you are ascertaining what is a reasonable rate for the convenience given. Take a workman, we will say, coming up from the country, and so on. If he is landed at King's Cross he is perhaps two or three miles away from his work, but here on the South Eastern Railway, for instance, we have brought the railway at an enormous cost into the West End and also into the City. These are circumstances which ought to be carefully considered when you are fixing what is the value and what is the worth of the accommodation that you get for the workmen. Therefore, I say, as far as we are concerned, and as far as I am concerned that we do not feel that we can be bound by any particular zone. We are quite prepared to consider what is a fair and reasonable rate to any of the stations within a reasonable district within which workmen can reside.

The Chairman: Sir Henry, you wish to say something more I think.

Sir Henry Oakley: I was rather at a loss to know what is the advantage of the zone to the workmen.

Mr. Beachcroft: At present the want of uniformity is felt to be a very great hardship upon the working men.

Sir Henry Oakley: The want of uniformity between the companies?

Mr. Beachcroft: The want of uniformity in charge on the same company, and as between one company and another company, is felt as a great hardship by the working men in the suburbs of London. I am speaking from personal knowledge here. Wherever I go to address the working man down in the south of London, he always says the same thing: Why is it that I am paying 6*d.* for the same distance which another man only pays 3*d.* for. Take, for instance, the Great Eastern. However noble the action of the Great Eastern is with regard to leading the way of cheap workmen's fares, even on the Great Eastern I find that, practically speaking, one man is paying 514 per cent. more for his ticket than another man living on the same line.

Mr. Birt: That cannot be right, surely; will you give me the case?

The Chairman: Give us the instance.

Mr. Beachcroft: I will take Globe Road, which is one mile and three-quarters. The workman pays 2*d.*, but if he goes to Enfield he pays one-tenth of a penny per mile for his accommodation.

Mr. Birt: May I explain to you once again that that is not a fair way of putting the case. For this reason, that 2*d.* fare to Enfield was imposed upon us by Parliament, because when we opened——

Mr. Beachcroft: Not to Enfield.

Mr. Birt: I beg your pardon, to Edmonton, the same thing.

Mr. Beachcroft: Not to Enfield.

Mr. Birt: I beg your pardon, you are quite right, it is Edmonton. In the construction of our Liverpool Street Station we had to pull down a large number of houses. Parliament said: these men must be provided for. There was no obligation then whatever on the part of the railway companies, as there is now, to put up artizans' dwellings in London, in substitution of those that they pulled down. And so Parliament said these men must be provided for in the country, and you must carry them for 2*d.* They required us to carry the working men for 2*d.* a head from Edmonton and several other places. You have laboured the point that we have voluntarily brought in Enfield. I admit it. Edmonton is a roadside station. Enfield is the next station. The trains are bound to run between Edmonton and Enfield. Therefore, we said: As the trains have to run to Enfield, the working men may have the benefit of them in the same way. That explains that Edmonton case. But you see that was a Parliamentary obligation imposed upon us in the shape of a penalty for being allowed to pull down so many houses occupied by the working classes in London. May I be allowed to say a few words on this zone question? My notion is, from the knowledge that I have of the working man, that it would be a most unpopular measure. Our experience is that the working men in the East end of London look at a halfpenny before they spend it. A halfpenny a day to them is a consideration. They like to go to the railway station from which they have to pay the lowest fare. But here under the zone system you give them no opportunity of paying a low fare.

Sir Henry Oakley: Unless he lives near.

Mr. Birt: Unless he lives very near. Take, for instance, a man living six miles. You say he has to pay for travelling that six miles up and down daily the same as another man who may travel 12 miles. Is that fair to the working man. Again, bear this in mind: it is a preference. I do not think the property holders would stand it. Why should any action of a railway company deplete one part of a neighbourhood of its population and drive it to another part, as must be the case if this system be adopted. Moreover, I see another objection to it, and it is this: As I said just now, the object of the Great Eastern Railway Company, and I believe it is the object of all the railway companies, is to spread its traffic—to do away with congestion. Now this will not spread the traffic at all, but congest the traffic at one or two stations, because it is quite clear that if a man is to pay for a journey of 12 miles he will go and live 12 miles out—oh! he will, my friend—instead of a place 6 miles out, seeing for his 12 miles he can ride quite as cheaply as he can for 6.

Mr. Leon: He has to save his time. He does not wish to take longer than he can help.

Mr. Birt: No doubt, but take, for instance, our workmen's trains running the 12 miles to Enfield. They are express trains, many of them—they only stop three or four times—they get over the ground in very much less time than a slow train travelling very little more than half the distance.

The Rev. Fleming Williams: Are not you forgetting for one moment the tendency of convenience always to be distributed within a very short time over the whole surface in the form of value. For the first fortnight, say, a man could live 12 miles away and get in for 2*d.*, but the value of the site of that 12 miles limit would, of course, be proportionately higher than at any intermediate point between that and the 6 miles, and no sooner would the competition for the occupation of that site have determined the exact value of the site, than you would find people finding it necessary to take the lesser advantageous site of closer proximity to the inner limit, and so within a very short time I should say, economic pressure would practically give you a level that would give a man very little advantage whether he lives 6 or 12 miles out.

Mr. Birt: I do not think it is right to punish a man who is satisfied to travel the 6 miles——

The Rev. Fleming Williams: That does not punish him.

Mr. Birt: By requiring him to pay as for 12.

The Rev. Fleming Williams: Of course that is your view. Two years would settle it.

Mr. Birt: This has been urged very strongly as another objection to this zone system: you have got a station, say, if you like, 12 miles out. The fare is $3\frac{1}{2}d.$ A man lives, say, 14 miles out. He cannot see his way to spend this extra penny a day. He therefore is satisfied to walk night and morning and to take a 12 miles ticket. But it is a wet night and he is anxious to get home. He will go to the station 14 miles, for instance. He will be called upon to pay the excess fare. Now, gentlemen, you all know, I suppose, the intolerable nuisance it is to passengers to be checked in their exit from the station by half-a-dozen people being pitched upon to pay the excess fare and having to wait for change perhaps and for a receipt. That is not a convenience to the public. It would be looked upon as a sad inconvenience.

The Rev. Fleming Williams: The zone is for the workmen's trains, of course.

Mr. Birt: It is for a workman going home by an ordinary train—because that is the point you have been labouring—that they are to be allowed to go home by ordinary trains.

The Rev. Fleming Williams: I see, thank you very much; I missed that.

Mr. Beachcroft: I have taken them all out here, showing the difference between the minimum and the maximum charge per mile, in the case of each company. It must be admitted that there is a great difference between the two.

Mr. Birt: I do not think it is quite fair to take that very low fare.

Mr. Scotter: Strike out that 2*d.*

Mr. Beachcroft: I will take the London and South-Western, that is ·236 as a minimum against ·625 as a maximum. That is a considerable difference.

Mr. Scotter: Could you give me an instance of the maximum?

Mr. Beachcroft: Weybridge, 19 miles.

Mr. Scotter: There are no working men at Weybridge.

Mr. Beachcroft: You have got a working men's train there.

Mr. Scotter: No, it is a market train.

Mr. Beachcroft: You ought to know, of course.

Mr. Scotter: That is the 3 o'clock train in the morning—a market train.

Mr. Beachcroft: At all events, it is a train.

Mr. Scotter: It is not fair to take that.

Mr. Beachcroft: Would the South-Eastern dispute that the workmen run to Erith. Erith is $14\frac{1}{2}$ miles, and Erith on the South-Eastern is ·210, which is, practically speaking, almost the very rate which the County Council suggests—we suggest ·200—here is ·210, as against the highest fare, which is ·555.

Sir Myles Fenton: It is more than that. There are special circumstances in the Erith case, which make the fare lower, just in the same way as you have competition between certain points on certain railways. It is that competition which brings down the Erith rate. We consider that the Erith rate is too low. We should be glad to have it higher, but we cannot get a higher rate. It is not that the other rates are too high.

Mr. Beachcroft: I might take the Chatham and Dover. From Ludgate to Victoria, $7\frac{3}{4}$ miles, there they charge even lower than in the case of the South Eastern, ·129.

Mr. W. Forbes: We charge 3*d.* all round the circle on account of the tram and 'bus competition to Penge, Dulwich, and so.

Mr. Beachcroft: There is a particular reason in each case, but the fact of there being a special reason in favour of the particular charge does not alter my argument, namely, that there is a great difference between the minima and the maxima charged on the various metropolitan lines, and that that difference is very much felt indeed by the working men. We think that practically there should be something in the way of uniformity, so that a man who lives, whether it be north, south, east, or west of the metropolis, may feel that he is not paying more than his brother.

The Chairman: He would do that under your system. A man who is 6 miles out would complain bitterly that he was paying more than the man who was 12 miles out.

Mr. Beachcroft: Yes; but he would pay upon a system well known and well recognised, and when he went to live in that very district would know perfectly well what he had to pay.

Mr. Birt: The working man would not mind the absence of system if his pocket benefits.

The Chairman: Where is the centre of your zone to be; the terminus in each instance?

Mr. Beachcroft: Yes.

The Chairman: Mr. Scotter, have you anything to say on this point?

Mr. Scotter: No, I think everything has been said.

Mr. Leon: We recognise the difference between living near London and further away from London. We recognise that the companies probably wish to decrease the facilities for living near London, because they have most congestion there, and they wish to take the working men out the same as we do. Our scale, you see, is differentiated, so that it is ·25 for the first zone against ·14 for the furthest zone of all. We do recognise that there should be some difference, but not such a large difference as Mr. Beachcroft has pointed out. Then, again, might I say no doubt that the companies do wish to prevent congestion, but at the same time that the companies may rather help the congestion at a particular station. Mr. Birt has pointed out that Enfield having great facilities has got a large working-class population there. If you distribute the zone between 5 and 10 miles you enable them to go anywhere between those two distances and to get the same facilities. It is not likely that they will go to a crowded place if they can go to a place which is not crowded, neither will they go the 12 miles when they can get the same facilities at 6. Time is of great importance to these men, particularly when they have been working hard all day and wish to get home to their tea as soon as they can. They certainly do not wish to travel any further than they need. I think such a zone system as is suggested, which is

practically carried out by the grouping of stations, although I do not think perhaps with such temptations to the working men, would help to avoid the congestion which Sir Henry spoke about.

Mr. Beachcroft: The Metropolitan District, I take it, would not mind my drawing attention to the fact, if my information is correct, that the Bill which they had in Parliament—the Further Powers Bill, which, I think, comes on to-day for consideration contained a proposal for a zone at these fares, 4 miles at 1*d.*, 6 miles at 1½*d.*, 8 miles at 2*d.*, 10 miles at 2½*d.*, 12 miles at 3*d.*

Mr. Powell: I suppose that is what you had regard to just now when you said we had "proposed."

Mr. Beachcroft: Yes.

Mr. Powell: I thought perhaps I should have the opportunity of correcting you. That is not a proposal for fares absolutely. It is simply a proposal for exemption from liability beyond 100*l.* in those cases where such fares are charged. Wherever we charge fares not exceeding those mentioned in the Bill we shall be entitled to exemption from liability to compensation above 100*l.* We have not asked for those powers.

The Rev. Fleming Williams: I see. I thought the opposite result was the effect of your Bill. I thought you were actually defining for yourself a zone from a distinct preference to the system.

Mr. Powell: No.

Mr. Leon: What is the difference between getting rid of your obligation between Earl's Court and the Mansion House? I saw Mr. Forbes about that in the Committee Room in the House of Commons.

Mr. Powell: That is a question for the House of Commons.

The Chairman: If that clause is carried do you say you will not adopt that system?

Mr. Powell: I am not prepared to make any admission about that now.

The Chairman: I know what the meaning of those clauses is, and I have a shrewd suspicion if you pass that clause that you will adopt that system of fares. I do not wish you to say so publicly.

Mr. Powell: At the same time it is not a zone scale in the meaning of Mr. Beachcroft, as I understand the County Council proposition.

Mr. Beachcroft: The County Council are opposing your Bill on that ground, I think.

Mr. Powell: No, you are opposing our Bill on a totally different line.

The Rev. Fleming Williams: Yes, that is so.

Mr. Beachcroft: I feel that the objections which have been raised in the room to-day are not so serious as I had anticipated. I had anticipated objections of all sorts, kinds, and descriptions, but, if I may be allowed to say so, I have heard nothing which shakes my belief in the possibility of suggesting a zone system, which might be satisfactory, not only to the public, but to the companies. I earnestly hope that the Department here will consider the question in all its bearings, and have regard to the very, I might almost say, weak character of the objections put forward to the system to-day, that you will consider whether you cannot induce the companies to come to some understanding on the subject.

The Chairman: To-day I hope that we shall initial the agreements that we have come to—one on each side—to show that we have arrived at some conclusion; and I should be very glad if we could adopt some sort of resolution upon this question. I came into this room rather an opponent of the zone system. I saw very great difficulties, and I see certain difficulties now, one or two of which have not been alluded to—I certainly do not propose to allude to them myself—but I must say that my opposition to the zone system is a good deal shaken by the discussion which has taken place to-day. Knowing what I know of the excessive convenience of uniformity and of putting information in the power of the working-man exactly as to what he is going to be charged, and as to the circumstances of the charge, I say, and I say so with a certain amount of confidence to the very clever gentlemen on this side of the table, that I do think there is a great deal to be said for something of the sort. Now, would it be possible, to use a phrase which Sir Henry Oakley has dropped—I mean the grouping of stations—with a view to the ultimate consideration of the zone system, or anything of that kind. You will understand, gentlemen, please, that it is impossible

by a stroke of the pen here to-day, sitting in this room, to say there shall be a zone system, and that it shall be at once carried out. You thoroughly understand that it is impossible and out of the question.

The Rev. Fleming Williams: Certainly.

The Chairman: But I should like to take a little step in the direction of the zone system to-day if we could.

Sir Myles Fenton: Allow me for a moment. How can you take two railways which are entirely dissimilar in their circumstances.

The Chairman: But, Sir Myles, you do that now. Your maximum fare is the same as the maximum fare of other companies.

Sir Myles Fenton: We have special tolls with regard to special portions of the railways.

The Chairman: Special fares?

Sir Myles Fenton: We have special powers of charge, and so on.

The Chairman: What is your highest fare for third class?

Sir Myles Fenton: A penny.

The Chairman: So it is for the others.

Sir Miles Fenton: We charge a penny because we get exemption from the tax, but we have very much higher power.

The Chairman: What is your highest statutory power for third class?

Sir Myles Fenton: On the Charing Cross, 1*s.* 6*d.*

The Chairman: For what distance?

Sir Myles Fenton: For the use of the Charing Cross Railway it is 1*s.* the third class and 1*s.* 6*d.* the first. We are quite content to consider a zone system, or any other system. It is only a question of what is a fair and reasonable fare to be charged.

The Chairman: That only goes to show that on that very expensive portion of your line up to the Holborn Viaduct, or up to London Bridge, or up to Charing Cross, it is not reasonable that there should be such a low fare as the fare upon other portions of the metropolitan railways, which are not so expensive to construct; but it does not tell against the zone system.

Sir Myles Fenton: You will see this in a moment. We now charge the workmen from Charing Cross and Cannon Street to Spa Road, for instance, 3*d.* for the return journey; that is over the most expensive portion of the railway.

The Chairman: How many miles is that?

Sir Miles Fenton: Three miles 42 chains from Charing Cross. The suggestion is that that is to be reduced to 1½*d.* Now we cannot afford to reduce it to 1½*d.* The effect of reducing it to 1½*d.* would be that we might get an enormous crowd of people who would dispossess the regular passengers who are going for longer distances.

Mr. Beachcroft: If you could induce them to travel a further distance it would be more profitable to you?

Sir Henry Oakley: I should like, Mr. Beachcroft, to put my objections a little higher, because I am rather afraid that Sir Courtenay has not done me justice.

The Chairman: Not for want of will, Sir Henry.

Sir Henry Oakley: I think it right to tell you that first of all I object to the zone. I think the fares are unfairly based, and the distances a great deal too long. Those are the three broad objections to your scheme. I say that the zone system is not so good as the station system, especially where it it is coupled with the advantage given in our case, of grouping, and in other lines too, that the way in which you have arrived at the mean fare is not equitable, because fares have been taken into account that are in the nature of a penalty, and not of an ordinary remunerative fare; and that the circumstances of the several lines are so different, that what the Great Eastern could do with advantage would involve me in a very heavy loss; and that, therefore, whether zone or fare, each line must be considered by itself. Now as to the question of the principle of the zone—whether grouping stations or not may be called a zone, I do not care—I am not particular about the language so long as I arrive at the right thing; but I should strongly object to come under any obligation to run workmen's

trains beyond a distance of say 10 miles. There is a huge area, I will not say, of depopulated, but of unpopulated land within that distance along the Great Northern. If I get to anything like a distance of 15 or 20 miles out, why, the houses are hardly to be seen. There is nobody there to want the accommodation.

Mr. Leon: They will soon come.

Mr. Bruce: Run the trains, and they will soon come.

Sir Henry Oakley: That is, I say, a dream.

Mr. Scotter: Yes.

Sir Henry Oakley: Here we have been running for 40 years, and although we have had workmen's trains and all sorts of accommodation, they are not filled up yet. Since 1871, that is 22 years, these workmen's trains have been running, and they have not filled up the 10 miles yet.

Mr. Leon: Ask Mr. Birt what he thought of Enfield before he ran the workmen's trains, and what he thinks now. I think he will probably say there has been a great increase, because of the cheap trains.

Mr. Birt: No. Enfield never has taken as a workmen's colony. Edmonton is the heavy workmen's colony. As regards Enfield, there are only a few working men there.

The Rev. Fleming Williams: That is because there is no ground accessible upon terms which would allow the erection of workmen's dwellings, apart from very costly rent.

Mr. Birt: I have no local knowledge.

Mr. Bolland-Newton: With regard to this proposition of a zone, the effect would be to increase the rates to the working men above our rates to-day in some cases. We adopt for the whole of our system a uniform rate of a penny each way, applicable to the whole of the zone.

The Chairman: How far does that extend?

Mr. Bolland-Newton: 12 miles. The workmen use the line indifferently.

The Rev. Fleming Williams: What company is this?

Mr. Birt: The North London.

Mr. Bolland-Newton: The effect of this zone system, if adopted, so far as we are concerned, would be that we should increase the fares for the longer distances.

The Rev. Fleming Williams: You need not do it, need you?

Mr. Bolland-Newton: I am merely pointing out that it is almost impossible to legislate for all the companies; they must be taken on their merits.

The Chairman: That is what I have found about railway rates.

Mr. Bolland-Newton: A hard and fast zone would be impossible.

Mr. Pickersgill: With regard to the last objection which Sir Henry Oakley has raised about the distance—I do not speak for the majority on the London County Council, but I happen to know that there is a considerable body in that Council feeling that 20 miles is an excessive distance, and that a good many of us think that 10 or 12 miles would be sufficient. I think that so far as that is concerned it is possible we might come to terms.

The Chairman: That is very important, Mr. Pickersgill.

Sir Henry Oakley: Yes, that is of value.

The Chairman: As to settling to-day a zone tariff, that is absolutely out of the question—I have not the slightest intention of attempting it—but I have not withdrawn my observation. I am still less opposed to the zone system than I was two hours ago, and I shall be glad to see whether there is anything we could agree to at some future day.

Sir Henry Oakley: We are always yielding, sir. Let us take this away, and reconsider it with the limit of 10 or 12 miles. Let us see whether we can make any suggestion to you as to the fares. This has been very cleverly done. Let us do the London County Council the justice to say that. It is very cleverly drawn, but it will not bear the test of practical experience, and certainly it is not a commercial result. Sir Courtenay has put it very well. We cannot settle this thing with a sweep of the pen. We will each consider it for ourselves, and we will meet again with the result of our own thoughts and inquiries, and then let Sir Courtenay know when we are in a condition to see you again.

The Rev. Fleming Williams: Hear, hear.

The Chairman: Let us agree to some words, if you please. I should like to have something down as a basis of discussion. "That the railway companies will consider a "system of grouping fares for varying distances up to 12 miles from the terminus of "each railway."

Sir Henry Oakley: 10 or 12 miles.

Mr. Beachcroft: 12 or 15.

Mr. Birt: No.

Sir Henry Oakley: I will put my case. It is a practical way of putting it. Barnet is my longest distance, and that is $9\frac{1}{4}$ miles.

The Chairman: I say "up to 12 miles." What do you say, Mr. Pickersgill? There is no reason why the County Council should not press for a larger distance later.

Mr. Leon: Take the case of the Great Western and the Metropolitan; 10 miles will not take you but very little out, if you take from the terminus of the Metropolitan.

Mr. Hopwood: It would be 10 miles from Paddington.

The Chairman: Let us have it read out again, "That the railway companies will "consider a system of grouping fares for varying distances up to 12 miles from the "terminus of the railway."

Mr. Scotter: No, that will not do.

The Rev. Fleming Williams: It is only to fix the distance.

Mr. Scotter: Excuse me, Sir Courtenay, I am dead against its being recorded in any shape or form that the railway companies will consider it, because the railway companies have considered it, and they have come to a pretty strong conclusion about this, namely, that it is a gross injustice to the working men.

The Chairman: Sir Henry Oakley tells me that you are, as ever, open to pressure, so far as consideration is concerned.

Sir Henry Oakley: We have had the advantage of hearing the other side, and I think where you cannot agree that it is only reasonable to ask time to consider their views. That is the way I should deal with it if it was left to me. I have stated my objections, and they are very strong on each point, but they are not final; they are always worth looking at.

Mr. Scotter: I would rather say "That the question after discussion was deferred "for further consideration." Leave it in that form—"The question was discussed at "some length, and deferred for further consideration at another meeting with the "County Council." I do not object to that, but I do not like to be committed to a group, because it will be thrown at us some day.

Sir Henry Oakley: No one is committed to a group.

Mr. Hopwood: It is a somewhat new basis now—a 12-mile basis instead of 20 miles.

Mr. Scotter: I do not object to 12 miles.

Mr. Sarle: I think for certain reasons I would rather have the name of the station mentioned than 12 miles. I would rather have the name of Croydon, for instance. I quite prepared to go as far as Croydon.

Mr. Scotter: Will Sir Courtenay kindly consider whether that will meet all our views: "After discussion the subject was deferred for further consideration."

Sir Henry Oakley: Your suggestion is right enough—that the subject be deferred for further consideration.

Mr. Scotter: I was asking Sir Courtenay. Of course, I bow to his decision in the matter.

Sir Henry Oakley: There is no objection to that?

Mr. Scotter: I do not think our friends will object to that.

Mr. Pickersgill: Will you read what you have there?

The Chairman: "That the railway companies will consider"—this is not binding anybody, but it pledges you to consideration—"the question of grouping fares for varying distances up to 12 miles from the terminus of each railway."

A Railway Representative: Would you put in "about" 12 miles?

The Chairman: It is not definite, it is only for consideration.

Sir Henry Oakley: Twelve miles might be suitable for some and 10 miles suitable for others. We should be limited by the stations and the opportunity of working these suburban trains. As I said, Barnet is the outside of my suburban service.

The Chairman: Sir Henry and Mr. Scotter, what does this pledge you to: "The "railway companies will consider the system of grouping fares for varying distances "up to 12 miles"?

Mr. Scotter: I am content after what you say.

Mr. Beachcroft: The only thing I would ask upon that is, whether it may be understood that there will be a further meeting?

Mr. Birt: I think that follows.

The Chairman: I think it must be understood as between us as a personal arrangement. Is there anything further to-day, Mr. Beachcroft?

Mr. Beachcroft: No. The other points on our paper have really already been dealt with, except the Great Western.

The Chairman: There is a special arrangement come to after negotiation by Major Marindin with the Great Western, particulars of which shall be communicated to you in due course. It is not finally settled yet. I will not say there is a twopenny halfpenny row, but there is a farthing row at the present moment.

Mr. Allan: The trains commenced, Sir Courtenay, on the 1st June.

The Chairman: Is that so?

Mr. Allan: Yes.

The Chairman: Then we will send the County Council particulars of what we have been informed. We will send them the substance of the correspondence, and what has taken place. I will just read these out, and I shall be very much obliged if some one on each side will sign them. It is not a legal document, it is only a record.

Mr. Birt: Sir Henry Oakley will sign for us.

The Chairman: "(I.) Workmen's tickets shall be available for return by any train "carrying third class passengers after 12 noon, subject to power of the company where "circumstances demand to set apart special trains for the conveyance of workmen so "travelling, and to except such train or trains as may be found necessary for the "general convenience of the traffic—in case of difference the Board of Trade to have "power to decide. (II.) That the conditions as to the issue of workmen's tickets, "the fares, kind of tickets supplied, and trains by which available be published not "only in the book of the time-tables of each company, but be conspicuously advertised "by means of posters at all stations served by workmen's trains. (III.) That all "workmen shall be able to take daily workmen's tickets on week days, the issue in "addition of a ticket or tickets to cover a week's journeys to be in the discretion of "the company."

Sir Henry Oakley: Not very happy that "shall be able to"—some of them may not be able to—they may not have the money.

Mr. Scotter: It is agreed to now.

Sir Henry Oakley: We understand it—we know what it is.

The Chairman: "Shall have an opportunity of taking."

Sir Henry Oakley: Yes.

The Chairman: "(IV.) The railway companies will consider the system of grouping "fares for varying distances up to 12 miles from the terminus of each railway."

Mr. Beachcroft: Can we say anything about our next meeting?

The Chairman: I can only say that the present meeting has been so pleasant and so agreeable that I shall look forward to the next one.

The resolutions were initialled by Sir Henry Oakley and Mr. Beachcroft.

Mr. Beachcroft: I think on behalf of the County Council I should like to be allowed to express our thanks to the Companies for having met us so courteously to day.

Sir Henry Oakley: Mr. Beachcroft, do not they always do that?

Mr. Beachcroft: That is understood.

(*The Conference then terminated.*)

No. 2.

LONDON COUNTY COUNCIL to BOARD OF TRADE.

Spring Gardens, S.W.,
December 9, 1893.

Sir,

With reference to the conference held on the 28th of June last at the office of the Board of Trade between the Managers of the London Railway Companies and representatives of the Council, on the subject of workmen's trains, I am directed to inquire whether the Board has received any further communications from the Companies, especially with respect to the question of grouping fares for varying distances up to 12 miles from the terminus of each railway, which the representatives of the Companies undertook at the conference to consider. The Council, while in no way desirous of bringing what may be thought undue pressure to bear, cannot but entertain a strong wish that matters should be brought to a point of some kind, so that their labours may not be thrown away.

I am, &c.
(Signed) H. DE LA HOOKE,
Clerk of the Council.

The Secretary,
Board of Trade (Railway Department),
Whitehall, S.W.

No. 3.

BOARD OF TRADE to Sir HENRY OAKLEY.

Board of Trade,
December 14, 1893.

Sir,

Adverting to previous communications, on the subject of workmen's trains, I am directed by the Board of Trade to transmit to you herewith copy of a letter that they have received from the London County Council in the matter.

I am to state that the Board would be glad to learn your views as to whether a meeting of the adjourned conference between the Managers of the London Railway Companies and representatives of the Council might with utility be arranged for some date next month, to discuss the points reserved at the meeting on the 28th June last.

I am, &c.
(Signed) FRANCIS J. S. HOPWOOD.

Sir Henry Oakley,
Great Northern Railway,
King's Cross.

No. 4.

Sir HENRY OAKLEY to BOARD OF TRADE.

The Great Northern Railway,
General Manager's Office,
King's Cross Station, London, N.,
January 18, 1894.

Sir,

I have brought before a meeting of the Railway Companies your letter of the 14th December, enclosing copy of a communication from the Clerk to the London County Council, inquiring the result of the consideration by the Railway Companies of the suggestion for grouping fares within a radius of 12 miles from the terminus of each railway, with especial reference to the views expressed by the chairman of the conference between the representatives of the London County Council and the Railway Companies at the Board of Trade on the 28th June.

The companies, in considering the suggestion for the adoption of a system of grouping fares, have made a close comparison of the arrangements in force on their respective railways, and find that the conditions and the requirements of the different districts vary so widely on the suburban lines of the several Companies that it is not practicable to devise any system for universal adoption. I need only point out by way

of illustration that the North London, the Metropolitan, Metropolitan District, and the South-Eastern Railway (as far as Deptford and Greenwich), traverse thickly populated districts, and there is in the early morning a substantial traffic in both directions on those railways, while on lines purely suburban, the flow of traffic is in the direction of the City in the morning, and to the suburbs in the evening. This difference alone in the conditions is material. In the one case the trains may be expected to be fairly well loaded in both directions, whereas in the other the return trains are practically empty.

I am further to observe that, as the result of the growth of workmen's traffic, and the desire of the railway companies to meet it, a system of fares has already been generally adopted, in which consideration is given to local requirements, more than one route or station being frequently available, that the passengers may have the advantage of the first or most convenient service of trains. The difference in distance between the same two points by different routes affect the fares, which are also governed in some degree by the competition of tramway or omnibus, and could not be met by any rigid system of zone or grouping.

The companies have, therefore, come to the conclusion that their present practice which, as explained, has been adapted to local wants, cannot be wisely disturbed. Moreover, the tests that have been applied to the zone system as suggested by the County Council, show that in some cases the fares would be raised and not lowered, and this, it is presumed, is not the intention of the County Council.

The companies are not unmindful of the interests of the working classes, as their arrangements, which go far beyond the statutory requirements, prove, and in the future, as in the past, they will be ready to consider and to adapt their accommodation to new requirements, but they are unanimously of opinion that the present system of grouping, where possible, answers all practical purposes better than any universal zone system, which latter, if adopted, would in practice require many reservations and qualifying conditions to make it workable, and result in a scheme not dissimilar to that which is now in force.

The companies approve and adopt the arrangements come to at the meeting with the representatives of the London County Council on the 28th June last, and which may be taken to be as follows:—

That workmen's daily tickets shall be issued, with the option to the company of issuing weekly tickets if preferred.

That all workmen shall be allowed to return by any train conveying third-class passengers after 12 noon, with the reservation of the right to the company to provide special trains for the accommodation of the workmen, and to except such train or trains as may be found necessary for the general convenience of the traffic.

That the fares and conditions for the issue of workmen's tickets should be more particularly advertised at the stations by means of placards and posters.

I am, &c.

(Signed) H. OAKLEY.

To the Assistant Secretary
(Railway Department),
Board of Trade, S.W.

No. 5.

BOARD OF TRADE to LONDON COUNTY COUNCIL.

SIR, Board of Trade, February 20, 1894.

I AM directed by the Board of Trade to advert to your letter of the 9th December last on the subject of workmen's trains, and to enclose, for the information of the London County Council, copy of a communication that this Board have received from Sir Henry Oakley on the part of the railway companies concerned, conveying the result of their consideration of the suggestion for the adoption of a system of grouping fares.

I am, &c.

(Signed) FRANCIS J. S. HOPWOOD.

The Clerk of the London County Council,
Spring Gardens, S.W.

No. 6.

LONDON COUNTY COUNCIL to BOARD OF TRADE.

Sir, Spring Gardens, S.W., April 27, 1894.

Referring to the communication received by the Board of Trade from Sir Henry Oakley on the subject of workmen's trains, a copy of which you were good enough to send me for the information of the London County Council, on the 20th of February last, I am directed by the Committee dealing with the matter to say that, as you do not invite observations on the communication and as that document appears to reflect a definite and final conclusion come to by the companies on the main point at issue, it seems to them useless to carry the discussion further or to suggest that the conference held in June last should be again convened.

The Committee greatly regret that the efforts of the Council to bring about community of action on the part of the companies in the important matter of workmen's trains have led to no greater result, and, when reporting to the Council, which they will do forthwith, will recommend that the necessity for a parliamentary inquiry into the whole subject be urged upon the Government.

I am, &c.

(Signed) H. DE LA HOOKE,
Clerk of the Council.

The Assistant Secretary, Railway Department,
Board of Trade, Whitehall, S.W.

No. 7.

BOARD OF TRADE to Sir HENRY OAKLEY.

Sir, Board of Trade, May 4, 1894.

Adverting to your letter of the 18th January last, on the subject of workmen's trains, I am to transmit to you herewith, for the information of the railway companies, copy of a communication that this Board have now received from the Committee of the London County Council dealing with the matter.

I am, &c.

(Signed) FRANCIS J. S. HOPWOOD.

Sir Henry Oakley, Great Northern Railway,
King's Cross, N.

No. 8.

Sir HENRY OAKLEY to BOARD OF TRADE.

The Great Northern Railway,
General Manager's Office,
King's Cross Station, London, N.,
May 5, 1894.

Sir,

I am in receipt of your letter of the 4th instant, and the copy of communication from the London County Council sent therewith, on the subject of workmen's trains, respecting which I will communicate with the other companies.

I am, &c.

(Signed) H. OAKLEY.

The Assistant Secretary,
(Railway Department),
Board of Trade, S.W.

No. 9.

BOARD OF TRADE to Sir HENRY OAKLEY.

Sir, Board of Trade, June 21, 1894.

I am to acquaint you, for the information of the railway companies having termini in London, that this Board have under their consideration the question of the desirability of the publication, as a Parliamentary Paper, of the Notes of the Proceedings at the Conference at this office in June 1893, on the subject of workmen's trains, together with copy of subsequent correspondence, and I am to state that the Board of Trade would be glad to be informed whether the railway companies see any objection to the proposal.

I am, &c.

(Signed) FRANCIS J. S. HOPWOOD.

Sir Henry Oakley,
Great Northern Railway,
King's Cross, N.

No. 10.

SIR HENRY OAKLEY to BOARD OF TRADE.

The Great Northern Railway,
General Manager's Office,
King's Cross Station, London, N.,
July 4, 1894.

MY DEAR SIR,

WITH reference to your letter of the 22nd ultimo, I have conferred with the companies, and have now the pleasure to state that they see no objection to the publication as a Parliamentary Paper of the Notes of the Proceedings at the Conference at the Board of Trade in June 1893, between the metropolitan companies and the representatives of the London County Council, on the subject of workmen's trains.

I am, &c.
(Signed) H. OAKLEY.

F. J. S. Hopwood, Esq.,
Board of Trade,
Whitehall, S.W.

No. 11.

BOARD OF TRADE to LONDON COUNTY COUNCIL.

SIR,

Board of Trade, July 20, 1894.

I AM directed by the Board of Trade to acquaint you, for the information of the London County Council, that this Board propose, with the concurrence of the railway companies, to publish as a Parliamentary Paper the Notes of the Conference held at this office on 28th June, 1893, on the subject of workmen's trains on the metropolitan lines, together with copy of the subsequent correspondence.

I am at the same time to enclose a first and unrevised proof of the print.

I am, &c.
(Signed) FRANCIS J. S. HOPWOOD.

The Clerk, London Council,
Spring Gardens, S.W.

No. 12.

LONDON COUNTY COUNCIL to BOARD OF TRADE.

SIR,

Spring Gardens, S.W., August 3, 1894.

REFERRING to your letter of the 20th ultimo, stating that the Board of Trade propose to publish as a Parliamentary Paper the Notes of the Conference held at the Board's offices on the 28th June, 1893, on the subject of workmen's trains on the metropolitan lines, together with copy of the subsequent correspondence, I am directed to inform you that the Council has no observations to offer on the proposed publication.

I return herewith the proof which accompanied your letter.

I am, &c.
(Signed) H. DE LA HOOKE,
Clerk of the Council.

The Assistant Secretary
(Railway Department), Board of Trade,
7, Whitehall Gardens, S.W.

COPY OF STATEMENTS

FURNISHED TO THE

BOARD OF TRADE

BY THE

RAILWAY COMPANIES HAVING TERMINI IN THE METROPOLIS,

IN REPLY TO

A CIRCULAR LETTER REQUESTING INFORMATION ON THE SUBJECT.

(*In continuation of Parliamentary Paper* [*C.*—6039 *of* 1890].)

TOGETHER WITH A

General Statement showing the Total Number and Mileage of the Trains required to be run by Special Act of Parliament, and also of those actually running in the years 1883, 1890, and 1894 respectively on the Metropolitan Lines.

Presented to both Houses of Parliament by Command of Her Majesty.

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TABLE OF CONTENTS.

No.	Name.	Date.	Subject.	Page.
—	Board of Trade to the various Railway Companies having termini in the Metropolis.	1894. April 4	Circular letter requesting to be supplied with an amended statement up to date showing facilities afforded to working classes.	
1	Great Eastern Railway Company.	—	Statement - - - - - -	4
2	London, Chatham, and Dover Railway Company.	—	Do. - - - - - -	12
3	Metropolitan Railway Company.	—	Do. - - - - - -	15
4	Metropolitan District Railway Company.	—	Do. - - - - - -	25
5	North London Railway Company.	—	Do. - - - - - -	30
6	London, Brighton, and South Coast Railway Company.	—	Do. - - - - - -	33
7	Great Northern Railway Company.	—	Do. - - - - - -	41
8	Great Western Railway Company.	—	Do. - - - - - -	45
9	London and North-Western Railway Company.	—	Do. - - - - - -	47
10	London and South-Western Railway Company.	—	Do. - - - - - -	50
11	Midland Railway Company -	—	Do. - - - - - -	53
12	South-Eastern Railway Company.	—	Do. - - - - - -	55
13	London, Tilbury, and Southend Railway Company.	—	Do. - - - - - -	56
14	City and South London Railway Company.	—	Do. - - - - - -	58
—	- - - - -	—	General Statement showing the total Number and Mileage of the Trains required to be run by special Act of Parliament, and also of those actually running in the years 1883, 1890, and 1894 respectively, on the Metropolitan Lines.	59

RAILWAYS (WORKMEN'S TRAINS ON THE METROPOLITAN LINES).

Copy of Letter from the Board of Trade to Railway Companies.

Board of Trade (Railway Department),
4th April 1894.

Sir,

I am directed by the Board of Trade to transmit to you herewith a print of the Return* on the subject of Railways (Workmen's Trains on the Metropolitan Lines) which was presented to both Houses of Parliament in the year 1890, and to state for the information of the directors of your company that the Board of Trade think it would be convenient to have the return revised up to the present date with a view to its re-issue.

With this object the Board of Trade would be glad if your company would cause them to be furnished with an amended statement corrected up to date, and in the form adopted in the return, showing the facilities now afforded to the working classes by the company, and containing such explanatory remarks as may be thought necessary.

I am also to request that the enclosed comparative statement may be supplemented by a summary, on the same basis, of the workmen's trains actually running in the year 1894 on the company's railways, and a copy of the same forwarded to this Department with the revised return.

I am, Sir,
Your obedient servant,
(Signed) Francis J. S. Hopwood.

To the secretary of the following railway companies :—

1. Great Eastern.
2. London, Chatham, and Dover.
3. Metropolitan.
4. Metropolitan District.
5. North London.
6. London, Brighton, and South Coast.
7. Great Northern.
8. Great Western.
9. London and North-Western.
10. London and South-Western.
11. Midland.
12. South-Eastern.
13. London, Tilbury, and Southend.
14. City and South London.

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* Note.—Parliamentary Paper [C. 6039 of 1890.]

No. 1.

GREAT EASTERN RAILWAY COMPANY.

Statutory obligations.

The statutory obligations of this Company are laid down in the usual terms in the following Special Acts, viz. :—

I.—*The Great Eastern Railway* (*Metropolitan Station and Railways*) *Act*, 1864, 27 & 28 Vict. cap. 313.

Section 80 requires that *one* train shall be run every morning from Edmonton and Walthamstow stations to Liverpool Street station, and *one* every evening from Liverpool Street station to Edmonton and Walthamstow stations, at such hours, not being later than seven in the morning, or earlier than six in the evening, as may be most convenient for artisans, &c., at fares not exceeding one penny per passenger for each journey, and stopping at all intermediate stations.

Section 81 empowers the Company to ascertain the rights of applicants for cheap tickets, and to refuse to issue such tickets for a less period than one week.

Section 82 provides for penalties for the abuse of tickets.

Section 83 limits the liability of the Company under any claim to compensation for injury or otherwise, in respect of passengers travelling with such tickets, to a sum not exceeding one hundred pounds.

Note.—The terminal station at Walthamstow is Wood Street.

II.—*The London, Blackwall, and Millwall Extension Railway Act*, 1865, 28 Vict. cap. 116.

Section 58 requires that *one* train shall be run every morning and *one* every evening upon the Extension Railway, or upon so much thereof as is used for passenger traffic, at such hours (not being later than eight in the morning or earlier than six in the evening) as may be most convenient for the labouring classes employed in the Isle of Dogs, and at fares not exceeding one penny per passenger for each journey ; the liability of the Company in the case of injury or otherwise being limited to one hundred pounds.

III. - *The Great Eastern Railway* (*Additional Powers*) *Act*, 1869, 32 & 33 Vict. cap. 89.

Section 19 limits the compensation for injury to passengers carried at workmen's fares on any part of the railways of the Company.

IV.—*The Gaslight and Coke Company's Act*, 1871, 34 & 35 Vict. cap. 75.

Section 22 requires the Great Eastern Railway Company, during the time they work the railway authorised by the Act, to run *one* train every morning from Barking Road station to Beckton station, and *one* every evening from Beckton station to Barking Road station, at such hours, not being later than seven in the morning, or earlier than six in the evening, as may be most convenient for artisans, &c., at fares not exceeding one penny per passenger for each journey, and calling at all intermediate stations.

Section 23 empowers the Company to ascertain the rights of applicants for cheap tickets, and to refuse to issue such tickets for a less period than one week.

Section 24 provides for penalties for the abuse of tickets.

Section 25 limits the liability of the Company under any claim to compensation for injury or otherwise, in respect of passengers travelling with such tickets, to a sum not exceeding one hundred pounds.

Note.—Barking Road station is now called Canning Town station.

V.—*London and Saint Katherine Docks Act*, 1882, 45 Vict. cap. 2.

Section 23 requires that *one* train shall be run every morning upon the railway for the whole length, calling at all intermediate stations at such hours, not being later than seven in the morning or earlier than six in the evening, as may be most convenient for artisans, &c., at fares not exceeding one penny per passenger for each journey (in addition to the Government duty).

Section 24 limits the compensation for injury or otherwise to one hundred pounds.

The Company is running the following workmen's trains, viz. :— Detail of trains running.

From Wood Street and Enfield to London (Liverpool Street).

1. At 4.41 a.m. from Enfield Town, arriving at Hackney Downs at 5.11, Bethnal Green at 5.20, Liverpool Street 5.25.
2. At 5.0 a.m. from Wood Street, arriving at Hackney Downs at 5.16, Bethnal Green at 5.25, Liverpool Street 5.29.
3. At 4.58 a.m. from Enfield Town, arriving at Hackney Downs at 5.20, Bethnal Green at 5.29, Liverpool Street 5.33.
3A. At 5.1 a.m. from Enfield Town, arriving at Hackney Downs at 5.30, Bethnal Green at 5.39, Liverpool Street 5.44.
4. At 5.20 a m. from Wood Street, arriving at Hackney Downs at 5.36, Bethnal Green at 5.45, Liverpool Street 5.50.
5. At 5.40 a.m. from Wood Street, arriving at Hackney Downs at 5.56, Bethnal Green at 6.5, Liverpool Street 6.10.
6. At 5.47 a.m. from Wood Street, arriving at Hackney Downs at 6.2, Bethnal Green at 6.11, Liverpool Street 6.16.
7. At 5.34 a.m. from Enfield Town, arriving at Hackney Downs at 6.6, Bethnal Green at 6.15, Liverpool Street 6.19.
8. At 5.54 a.m. from Wood Street, arriving at Hackney Downs at 6.9, Bethnal Green at 6.18, Liverpool Street 6.22.
9. At 6.4 a.m. from St. James Street, arriving at Hackney Downs at 6.14, Bethnal Green at 6.23, Liverpool Street 6.28.
10. At 5.56 a.m. from Enfield Town, arriving at Hackney Downs at 6.21, Bethnal Green at 6.28, Liverpool Street 6.34.
11. At 6.3 a.m. from Enfield Town, arriving at Hackney Downs at 6.26, Bethnal Green at 6.34, Liverpool Street 6.40.
12. At 6.11 a.m. from Enfield Town, arriving at Hackney Downs at 6.32, Bethnal Green at 6.38, Liverpool Street 6.43.
13. At 6.21 a.m. from Lower Edmonton, arriving at Hackney Downs at 6.36, Bethnal Green 6.42, Liverpool Street 6.47.

Nos. 1, 2, 4, 5, 6, and 7 stop at all intermediate stations.

No. 3 misses Bush Hill Park, Silver Street, Bruce Grove, Stamford Hill, Stoke Newington, and Rectory Road.

No. 3A misses Lower Edmonton and White Hart Lane.

No. 8 misses St. James Street.

No. 9 misses London Fields and Cambridge Heath.

No. 10 misses Lower Edmonton, White Hart Lane, Seven Sisters, Stamford Hill, Stoke Newington, and London Fields.

No. 11 misses Bush Hill Park, Edmonton, Silver Street, Bruce Grove, Stamford Hill, Stoke Newington, Rectory Road, and Cambridge Heath.

No. 12 misses Bush Hill Park, Silver Street, White Hart Lane, Bruce Grove, Seven Sisters, Stamford Hill, Stoke Newington, Rectory Road, London Fields, and Cambridge Heath.

No. 13 misses Silver Street, White Hart Lane, Bruce Grove, Seven Sisters, Stamford Hill, Stoke Newington, Rectory Road, London Fields, and Cambridge Heath.

The tickets are issued to and from all intermediate stations.

For the return journey the tickets are available on the day of issue by any train leaving Liverpool Street after 12.0 noon.

From Stratford to London (Liverpool Street and Fenchurch Street).

1. At 5.18 a.m. from Stratford Market, arriving at Bethnal Green at 5.30 a.m., and Liverpool Street 5.35 a.m.

1A. At 5.15 a.m. from Stratford Market, arriving at Fenchurch Street at 5.30 a.m.

1B. At 5.32 a.m. from Coborn Road, arriving at Bethnal Green at 5.37 a.m., and Liverpool Street at 5.42 a.m.

2. At 5.30 a.m. from Stratford Central, arriving at Bethnal Green at 5.41 a.m., and Liverpool Street 5.46 a.m.

2A. At 5.45 a.m. from Stratford Market, arriving at Fenchurch Street at 6.0 a.m.

2B. At 5.43 a.m. from Stratford Central, arriving at Bethnal Green at 5.53 a.m., and Liverpool Street at 5.57 a.m.

At 5.52 a.m. from Bow Road arriving at Fenchurch Street at 6.5 a.m.

3. At 5.58 a.m. from Stratford Central, arriving at Bethnal Green at 6.8 a.m., and Liverpool Street 6.13 a.m.

4. At 6.9 a.m. from Stratford Central, arriving at Bethnal Green at 6.20 a.m., and Liverpool Street 6.25 a.m.

4A. At 6.12 a.m. from Stratford Market, arriving at Fenchurch Street at 6.27 a.m.

5. At 6.22 a.m. from Stratford Market, arriving at Bethnal Green at 6.33 a.m., and Liverpool Street 6.37 a.m.

These trains stop at all intermediate stations, except Nos. 1A, 2A, and 4A, which do not call at Shadwell or Leman Street.

By Nos. 1A, 2A, and 4A, the tickets are also issued to Burdett Road and Stepney, and also to Shadwell and Leman Street. Passengers for the two last named stations changing at Stepney.

The tickets are also issued from Coborn Road and Globe Road to Liverpool Street by Nos. 1, 2, 2B, 3, 4, and 5, and from Globe Road by No. 1B.

For the return journey the tickets are available on the day of issue to Stratford Market or Stratford by any train leaving Liverpool Street or Fenchurch Street after 12 noon. To Coborn Road and Globe Road by any train leaving Liverpool Street for those stations after 12 noon.

Holders of workmen's tickets issued from Stratford or Stratford Market to Liverpool Street are allowed to join the train on the return journey at either of the following stations on the Fenchurch Street line, viz., Fenchurch Street, Leman Street, Shadwell, Stepney, Burdett Road, or Bow Road.

From Stratford Market to Canning Town, Woolwich, &c.

1. At 5.10 a.m. from Stratford Market, arriving at Canning Town 5.15, and North Woolwich 5.28 a.m.

At 5.28 a.m. from Stratford Market, arriving at Canning Town at 5.33 a.m. and North Woolwich at 5.51 a.m.

1A. At 5.33 a.m. from Stratford Market, arriving at Canning Town at 5.38, and North Woolwich 5.51 a.m.

1B. At 5.58 a.m. from Stratford Market, arriving at Canning Town at 6.3, and North Woolwich 6.15 a.m.

2. At 4.46 p.m. from Stratford Market, arriving at Canning Town 4.51, and North Woolwich 5.3 p.m.

3. At 5.15 p.m. from Stratford Market, arriving at Canning Town at 5.20, and North Woolwich at 5.32 p.m.

These trains stop at all intermediate stations.

For the return journey the tickets issued for the 5.15, 5.33, or 5.58 a.m. trains are available on the day of issue by any train leaving North Woolwich after 12 noon; and those issued for the 4.43 and 5.15 p.m. trains are available by any train leaving North Woolwich before 8.0 a.m. on the following day.

From Stratford Market to Beckton.

WEEK DAYS.

1. At 5.20 a.m. from Stratford Market, due at Beckton at 5.42 a.m.
1A. At 5.20 „ Canning Town, „ 5.33 „
2. At 1.15 p.m. from Stratford Market, „ 1.34 p.m.
3. At 4.15 „ „ „ 4.32 „
4. At 9.15 „ „ „ 9.34 „

SUNDAYS.

5. At 5.20 a.m. from Stratford Market, due at Beckton at 5.39 a.m.
6. At 9.15 p.m. „ „ 9.34 p.m.

These trains stop at all intermediate stations, except No. 1, which misses Canning Town.

For the return journey the tickets issued for the 5.20 a.m. and 1.15 p.m. trains are available on the day of issue only by any train leaving Beckton after 12 noon. Those issued for the 4.15 and 9.15 p.m. trains are available by the 6.28 a.m. train from Beckton on the following day.

From Stratford Market to Royal Albert Dock.

1. At 6.22 a.m. from Stratford Market, arriving at Gallion's Station at 6.42 a.m.
1A. At 6.28 „ „ „ „ „ 6.51 „
2. At 6.36 „ „ „ „ „ 6.57 „
3. At 7.4 „ „ „ „ „ 7.23 „
3A. At 7.18 „ „ „ „ „ 7.39 „
4. At 7.32 „ Canning Town „ „ „ 7.49 „
5. At 7.42 „ Stratford Market „ „ 8.0 „
6. At 8.7 „ „ „ „ „ 8.29 „
7. At 8.20 „ „ „ „ „ 8.43 „
8. At 8.31 „ „ „ „ „ 8.52 „
9. At 8.37 „ „ „ „ „ 9.0 „

These trains stop at all intermediate stations.

South and North Woolwich.

Workmen's return tickets at three halfpence each are issued daily on week days by boat as under :—

From South Woolwich at 4.50, 5.10, 5.20, 5.45, 6.10, 6.25, and 6.40 a.m.
From North Woolwich at 5.0, 5.15, 5.34, 5.58, 6.18, 6.33, and 6.52 a.m.

These tickets are available for return on the day of issue only by any boat after 12 noon.

Conditions under which cheap tickets are issued.

Daily return tickets are issued each morning on all the above routes, and in addition, sets of six 2*d.* return workmen's tickets to Liverpool Street from the stations on the Enfield, Walthamstow, and Stratford lines are issued on Saturdays after 12 noon, and on Sundays during ordinary booking hours for use in the following week, at a charge of 1*s.* per set. Twopenny workmen's tickets to Liverpool Street for use the following day (or, in the case of those issued on Saturday, for use on the following Monday), are also issued from the same stations every evening after 4.0 p.m. The tickets are issued without restriction to any person applying for them. On the lines upon which workmen's trains are obliged to be run by Act of Parliament, the tickets are issued subject to the provisions of the Act; upon the other parts of the line, where the running of such trains is voluntary, the tickets are issued on the express condition that the liability of the company for compensation for injury or otherwise is limited to 100*l.* Since the 1st October 1882 workmen's tickets have been issued between intermediate stations, which was not done before that date.

The tickets are available in third-class carriages only. Holders of workmen's tickets are allowed to alight at or return from any intermediate station, without extra charge. There is no limit as to the amount of luggage which workmen are allowed to carry, and they use the luggage vans a good deal for their heavier packages.

Fares and distances.

The following are the fares and distances upon the sections of the line upon which the above trains are running :—

Between Enfield and Wood Street and London.

The return fare is 2*d.* between any of the stations.
The distances from Liverpool Street are—

To Bishopsgate	$\frac{1}{2}$ mile.
„ Bethnal Green	$1\frac{1}{4}$ miles.
„ Cambridge Heath	$1\frac{3}{4}$ „
„ London Fields	$2\frac{1}{2}$ „
„ Hackney Downs	3 „
„ Clapton	4 „
„ St. James' Street	$5\frac{3}{4}$ „
„ Hoe Street	$6\frac{1}{4}$ „
„ Wood Street	7 „
„ Rectory Road	$3\frac{3}{4}$ „
„ Stoke Newington	$4\frac{1}{4}$ „
„ Stamford Hill	5 „
„ Seven Sisters	$5\frac{3}{4}$ „
„ Bruce Grove	$6\frac{1}{2}$ „
„ White Hart Lane	$7\frac{1}{4}$ „
„ Silver Street	8 „
„ Lower Edmonton	$8\frac{3}{4}$ „
„ Bush Hill Park	10 „
„ Enfield Town	$10\frac{3}{4}$ „

Between Stratford and London.

The return fare is 2*d.*

The distances from Liverpool Street are—

To Bishopsgate	$\frac{1}{2}$ mile.
„ Bethnal Green	$1\frac{1}{4}$ miles.
„ Coborn Road	$2\frac{1}{2}$ „
„ Stratford Market	$4\frac{1}{4}$ „
„ Stratford Central	4 „

Between Stratford Market, Canning Town, and North Woolwich.

The return fares are—

Stratford Market to Canning Town	2*d.*
„ „ Tidal Basin, Custom House, Silvertown, or North Woolwich	3*d.*
Canning Town or Tidal Basin to North Woolwich or intermediate stations	2*d.*

The distances from Stratford Market are—

To Canning Town	$1\frac{3}{4}$ miles.
„ Tidal Basin	$2\frac{1}{4}$ „
„ Custom House	$2\frac{3}{4}$ „
„ Silvertown	$3\frac{3}{4}$ „
„ North Woolwich	$4\frac{1}{2}$ „

Between Stratford Market and Beckton and Royal Albert Docks.

The return fares are—

Stratford Market to Beckton	3*d.*
Canning Town, Tidal Basin, and Custom House to Beckton	2*d.*

The distances from Stratford Market are—

To Canning Town	$1\frac{3}{4}$ miles.
„ Tidal Basin	$2\frac{1}{4}$ „
„ Custom House	$2\frac{3}{4}$ „
„ Beckton	$4\frac{3}{4}$ „

The Royal Albert Docks are two miles from Custom House, and the return fares to the docks are as follows :—

From Stratford Market	5*d.*
„ Canning Town	4*d.*
„ Tidal Basin	4*d.*
„ Custom House	2*d.*

Number of tickets issued.

The number of return workmen's tickets issued in November 1893 was 372,631, and in December 1893 it was 331,150, the smaller number in the latter month being due to the Christmas holidays.

The total number for the year 1893 was 4,421,643.

Make-up of trains.

The following is the make-up of the trains :—

Enfield Line Trains.

Nos. 3A and 13 are ordinary trains, having five third-class carriages, two third-class breaks, with three first-class and five second-class carriages, and seating 300 third-class passengers.

Nos. 1, 3, 7, 10, 11, and 12 are used for workmen only, Nos. 3 and 12 having nine third-class carriages, two third-class breaks, three second-class and two first-class carriages, and seating 500 third-class passengers; No. 7 having 10 third-class carriages, two third-class breaks, three second-class and one first-class carriages, and seating 550 third-class passengers, and Nos. 1, 10, and 11, having 12 third-class carriages, two third-class breaks, one second and one first-class carriage, and seating 650 passengers.

Walthamstow Trains.

Nos. 4, 5, and 6 are ordinary trains, having five third-class carriages, two third-class breaks, with three first-class and five second-class carriages, and seating 300 third-class passengers.

Nos. 2, 8, and 9 are used for workmen only, having 10 third-class carriages, two third-class breaks, two second-class and one first-class carriages, and seating 550 third-class passengers.

Stratford to London (Liverpool Street).

The 5.30 a.m. train consists of one first, four seconds, nine thirds, and two third-class breaks, and seats 500 third-class passengers.

The 5.58 a.m. train consists of one first, one composite, three seconds, five thirds, and one third-class break, and seats 320 third-class passengers.

The 5.32 a.m. train from Coborn Road and the 6.9 a.m. train from Stratford consist of two firsts, five seconds, six thirds, and two third-class breaks, and each seat 350 third-class passengers.

The 5.43 a.m. train consists of three firsts, four seconds, six thirds, and two third-class breaks, and seats 350 third-class passengers.

Stratford Market and London (Liverpool Street and Fenchurch Street).

These trains have each six third-class carriages, and one third-class break, with two first and two second-class carriages (except the 6.22 which has three) and seating 330 third-class passengers.

Stratford Market and Beckton.

The 5.20 a.m. train from Canning Town consists of 10 thirds, two third-class breaks, one second and one first-class carriages, seating 550 third-class passengers.

The 5.20 a.m., 1.15 and 9.15 p.m. trains consist of eight thirds, two third-class breaks, one second and one first-class carriages, seating 450 third-class passengers.

The 4.15 p.m. train consists of 10 thirds, two third-class breaks, one second and one first-class carriages, seating 550 third-class passengers.

The Sunday trains consist of six thirds, two seconds, two firsts, one third-class break, and one break-van, and each seat 330 third-class passengers.

Stratford Market and Woolwich.

These are ordinary trains with two first-class, two second-class, six third-class carriages, one third-class break, and one break-van, and seat 330 third-class passengers.

Millwall Railway.

Tickets are now issued on this line, at 2*d.* each for the return journey, to any station between Millwall Junction and North Greenwich by ordinary trains leaving North Greenwich at 5.7, 5.37, 6.7, and 6.37 a.m., and from Millwall Junction at 5.25, 5.55, 6.25, and 6.55 a.m., available for return by any train after 12 noon.

Blackwall Line.

Twopenny return tickets are also issued from Blackwall to Fenchurch Street by trains leaving Blackwall at 5.20, 5.35, 5.50, 6.5, 6.20, and 6.35 a.m., reaching Fenchurch Street 15 minutes later in each case, and from Bow Road and Burdett Road to Fenchurch Street by trains leaving Bow Road at 5.19, 5.49, and 6.16 a.m., arriving at Fenchurch Street respectively at 5.30, 6.0, and 6.27 a.m. These tickets are also issued *from* and to all intermediate stations, and are available for return after 12 noon.

The Enfield Trains to London.

Upon the Enfield and Wood Street lines there are many more workmen booked in the summer than in winter, and in the summer many travel by the earlier trains who, in winter, travel by the later ones.

In the winter time the earlier trains are comparatively light.

The front carriages in many of the trains are frequently much overcrowded when there are plenty of vacant seats in the rear part of the train.

The traffic on the Royal Albert Dock trains varies very much according to the state of the tide and the amount of shipping in the docks. The trains are sometimes overcrowded, but the total third-class accommodation provided in the whole of the trains running is more than the total number of third-class passengers booked.

The workmen, being allowed to return by any train after a certain hour, suffer the same inconvenience as the ordinary third-class passengers on the return journey.

The workmen's trains are advertised by special posters, as well as in the time-table books, and on the station's bills.

The following is a summary of the workmen's trains run under statutory obligation, and also those actually run :—

WORKMEN'S TRAINS.

Required by Act of Parliament.			Actually run.		
Between	No. of Trains per day each way.	Distance.	Between	No. of Trains per day.	Distance run.
Edmonton and London -	1	8¾	Enfield Town and London - -	7	75¼
Walthamstow and London - -	1	7	Lower Edmonton and London -	1	8¾
Canning Town and Beckton - -	1	3	Wood Street and London - -	5	35¼
Custom House and Gallions (Albert Dock).	1	2	St. James' Street and London -	1	5¾
Millwall Junction and North Greenwich.	1	1½	Stratford Market and London (Liverpool Street).	2	8½
			Stratford and London (Liverpool Street).	4	16¼
			Stratford Market and London (Fenchurch Street).	3	13½
			Coborn Road and London (Liverpool Street).	1	2½
			Stratford Market and North Woolwich.	6	27½
			Stratford Market and Beckton (Week Days).	4	19¼
			Canning Town and Beckton (Week Days).	1	3¼
			Stratford Market and Albert Dock -	10	49¼
			Canning Town and Albert Dock -	1	3¼
			Millwall Junction and North Greenwich.	8	12
			Blackwall and London - -	6	21¼
			North and South Woolwich - -	7	Boat trips.
			Bow Road and Fenchurch Street -	1	3
			Stratford Market and Beckton (Sundays).	2	9½
Total - -	5	22¼	Total - - -	68	304½

In addition to the foregoing arrangements, Special Cheap *Third* class tickets for workmen are issued by any train due to arrive before 8.0 a.m. as under :—

Required by Act of Parliament, none.

Actually run.	No. of Trains per Day.	Distance run.
Walthamstow :— Wood Street, Hoe Street, St. James' Street, Clapton, and Hackney Downs to London - - - - - - - - -	6	42¼
Wood Green :— Palace Gates, Green Lanes and Noel Park, West Green, Seven Sisters, Stamford Hill, Stoke Newington, Rectory Road, Hackney Downs to London -	3*	18¾

* One of these is a local train from Palace Gates to Seven Sisters, connecting with a train from Enfield to Liverpool Street.

Actually run.	No. of Trains per Day.	Distance run.
Cheshunt, viâ Lower Edmonton :—		
Cheshunt, Theobald's Grove, Forty Hill, Churchbury, Lower Edmonton, Silver Street, White Hart Lane, Bruce Grove, Seven Sisters, Stamford Hill, Stoke Newington, Rectory Road, and Hackney Downs to London	2*	22
Enfield Town :—		
Enfield Town, Bush Hill Park, Lower Edmonton, Silver Street, White Hart Lane, Bruce Grove, Seven Sisters, Stamford Hill, Stoke Newington, Rectory Road, Hackney Downs to London	5	53¾
Cheshunt, viâ Waltham Cross :—		
Cheshunt, Waltham Cross, Enfield Lock, Brimsdown, Ponders End, Angel Road, Park, Tottenham, Lea Bridge to London	3	46½
Romford, Chadwell Heath, Ilford, Manor Park, Forest Gate, Maryland Point to Liverpool Street	10‡	99
Romford, Chadwell Heath, Ilford, Manor Park, Forest Gate to Fenchurch Street	6‡	46¼
Liverpool Street, Bishopsgate, Bethnal Green, Globe Road, Coborn Road, Stratford, Maryland Point, Forest Gate, Manor Park, and Ilford to Romford	4‡	44½
Fenchurch Street, Leman Street, Shadwell, Stepney, Burdett Road, Bow Road, Stratford, Maryland Point, Forest Gate, Manor Park, and Ilford to Romford	2‡	15½
Stratford Central to London (Liverpool Street)	5	20¼
Stratford Market to London (Liverpool Street)	1	4¼
Liverpool Street to Stratford (Central)	4	16¼
South Woolwich :—		
South Woolwich, North Woolwich, Silvertown, Custom House, Tidal Basin, Canning Town to London (Fenchurch Street)	6	41
Stratford Market and Canning Town to Woolwich :—		
Stratford Market and Canning Town to North and South Woolwich	5†	21¼
Liverpool Street, Bishopsgate, Bethnal Green, Cambridge Heath, London Fields, Hackney Downs, Clapton to Walthamstow	6	42
Liverpool Street, Bishopsgate, Bethnal Green, Cambridge Heath, London Fields, Hackney Downs, Rectory Road, Stoke Newington to Wood Green (Palace Gates)	1§	2½
Liverpool Street, Bishopsgate, Bethnal Green, Cambridge Heath, London Fields, Hackney Downs, Rectory Road, Stoke Newington, Stamford Hill, Seven Sisters, Bruce Grove, White Hart Lane to Enfield Town	6	64½
Liverpool Street, Bishopsgate, Bethnal Green, Globe Road, Coborn Road, Stratford, Lea Bridge, Tottenham, Park, Angel Road, Ponders End, and Brimsdown to Cheshunt	6‡	74½
Liverpool Street, Bishopsgate, Bethnal Green, Cambridge Heath, London Fields, Hackney Downs, Clapton, Tottenham, Park, Angel Road, Ponders End, and Brimsdown to Cheshunt	1	14
Liverpool Street, Bishopsgate, Bethnal Green, Cambridge Heath—Churchbury to Cheshunt	2	22
Enfield and Wood Green to Woolwich :—		
Enfield Town, Bush Hill Park, Lower Edmonton, Silver Street, White Hart Lane, Bruce Grove, Seven Sisters, Palace Gates—Wood Green, Green Lanes and Noel Park, West Green and Lea Bridge	1	12¾
Total	85	723¾

* One is a local to and from White Hart Lane.
† One of these trains is from Canning Town only.
‡ From and to various points within the area.
§ Local train from Seven Sisters to Palace Gates in connection with a train from Liverpool Street to Enfield Town.

These tickets are also issued to and from intermediate stations.

These tickets are available for return by any train on the day of issue.

The fares charged are one half the ordinary third-class return fares with a minimum of 4*d*.

No. 1.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually running, in the Years 1883, 1890, and 1894 respectively, on the GREAT EASTERN RAILWAY.

Portion of Company's Line.	Details of Trains.								Remarks.
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
		M. C.		M. C.		M. C.		M. C.	
Enfield Line	—	—	4	43 0	6	64 40	7	75 20	
Lower Edmonton	1	8 60	—	—	1	8 60	1	8 60	
Walthamstow	1	7 0	3	21 0	5	35 0	5	35 20	Wood Street and London.
					1	5 60	1	5 60	St. James' Street.
Stratford	—	—	—	—	4	17 0	5	22 0	Stratford Market and London.
					3	12 0	4	16 20	Stratford and London.
							1	2 40	Coborn Road and London.
							1	3 0	Bow Road and London.
Millwall Extension	1	1 40	Nil.	Nil.	8	12 0	8	12 0	
Beckton Line	—	—	2	9 40	4	19 0	4	19 20	Stratford Market and Beckton. (Week days.)
	1	3 0	—	—	—	—	1	3 20	Canning Town and Beckton.
Stratford Market and North Woolwich.	—	—	—	—	2	9 40	6	27 40	
Royal Albert Dock Line	—	—	—	—	4	20 0	10	49 20	Stratford Market and Albert Dock.
Custom House and Gallions	1	2 0	4	8 0	—	—			
					1	3 40	1	3 20	Canning Town and Albert Dock.
Other parts of line	Nil.	Nil.	10	35 0	6	21 0	6	21 20	Blackwall to London.
					7	Boat trips.	7	Boat trips.	North and South Woolwich.
					3	13 40	3	13 40	Liverpool Street and New Cross.
					4	30 0	—	—	Gospel Oak and Wood Street.
							2	9 40	Stratford Market and Beckton. (Sundays.)
Total	5	22 20	23	116 40	59	271 40	73	318 0	

No. 2.

LONDON, CHATHAM, AND DOVER RAILWAY.

Statutory obligations.

The statutory obligations of this Company, prior to those which may result from the powers conferred on the Board of Trade by the Cheap Trains Act of 1883, 46 & 47 Vict., cap. 34, are laid down in the usual terms in the following Act, viz. :—*The London, Chatham, and Dover Railway* (*New Lines*) *Act*, 1864, 27 & 28 Vict., cap. 195.

Section 134 requires that *one* train shall be run every morning from Loughborough Park and Peckham Junction stations to Ludgate station, and *one* every evening from Ludgate Station to Loughborough Park and Peckham Junction stations, at such hours, not being later than seven in the morning or earlier than six in the evening, as may be most convenient to artisans, &c. residing at or beyond Camberwell, at fares not exceeding one penny per passenger for each journey (in addition to the Government duty), and stopping at all intermediate stations.

Section 135 contains provisions for enabling the Company to ascertain the rights of applicants for cheap tickets.

Section 136 provides for penalties for abuse of tickets.

Section 137 limits the compensation for injury to passengers travelling with cheap tickets to a sum not exceeding one hundred pounds.

Detail of trains running.

The Company is running the following workmen's trains, viz. :—

On the Main Line.

1 at 5.25 a.m. from Victoria, arriving at Penge 5.48.
2 „ 6.0 „ „ Holborn, „ „ 6.33.
3 „ 5.14 „ „ Penge, „ Victoria 5.45.
And at Holborn 5.50.
4 „ 6.9 „ „ „ „ Victoria 6.36.
And at St. Paul's 6.34.
5 „ 6.59 „ „ „ „ Holborn 7.28.
6 „ 7.10 „ „ „ „ St. Paul's 7.35.
7 „ 7.18 „ „ „ „ Victoria 7.45.

These trains stop at all intermediate stations except Nos. 4 and 5, which miss Loughboro Junction, Camberwell, Walworth Road, and Boro' Road, and No. 6 which misses Camberwell, Walworth Road, and Boro' Road.

On the return journey the workmen's tickets are available by any third-class train after 12 noon.

On the Metropolitan Extension.

1 at 4.0 a.m. from Victoria, arriving at Ludgate 4.36.
2 „ 4.57 „ „ „ „ „ 5.32.
3 „ 5.0 „ „ „ „ „ 5.36.
4 „ 5.32 „ „ Wandsworth Road „ 5.55.
5 „ 5.28 „ „ Victoria, arriving at „ 6.0.
6 „ 5.58 „ „ „ „ „ 6.31.
7 „ 6.2 „ „ „ „ „ 6.36.
8 „ 5.0 „ „ Ludgate, „ Victoria 5.39.
9 „ 5.45 „ „ „ „ „ 6.26.
10 „ 6.0 „ „ „ „ „ 6.39.
11 „ 6.11 „ „ Loughborough Junction, arriving at Ludgate 6.25.

All these trains stop at all intermediate stations, Nos. 2, 4, 6, and 11 are relief trains and not advertised.

On the return journey workmen's tickets are available by any of the ordinary trains leaving Victoria or Snow Hill after 12 noon; but the holders of such tickets on the return journey from the city must join the trains at Snow Hill and not at Ludgate.

On the Greenwich Line.

1 at 5.18 a.m. from Nunhead, arriving at Holborn 5.43.
2 „ 6.20 „ „ „ „ „ 6.50.
3 „ 6.58 „ „ „ „ „ 7.26.

No. 1 misses Camberwell, Walworth, Boro' Road, and St. Paul's. Nos. 2 and 3 call at all stations.

Passengers can also obtain workmen's tickets to Victoria by the train leaving Nunhead at 6.58 a.m. and Peckham Rye at 7.1 a.m. changing at Loughborough Junction.

Fares and Distances.

On the main line, the return fare between Victoria, or Holborn, and Penge, Sydenham Hill, Dulwich, and Herne Hill is 4*d.* for each daily return journey, and the distance from Penge to Victoria is 7 miles 15 chains, and to Holborn 7 miles 57 chains.

On the Metropolitan Extension, the daily return fare between any of the stations is 2*d.*, and the distance from Victoria to Ludgate is 7 miles 7 chains.

On the Greenwich line the daily return fare is 4*d.*

Conditions under which cheap tickets are issued.

On the Main Line from Victoria or Holborn to Penge and the intermediate stations, and on the Metropolitan Extension or loop, daily return tickets only are issued. The tickets are available in third-class carriages only. Applicants may be required to give their names and addresses, and those of their employers, but as a rule this is not done. Each holder is allowed to bring at his or her sole risk, a basket not exceeding 56 lbs. weight, containing trade tools so packed as not to be inconvenient or dangerous.

No other luggage is allowed.

Number of tickets issued.

In November 1893, 127,692 and in December 1893, 111,753 daily tickets were issued.

For the whole year 1893 the numbers were :—

Daily tickets - - - -	1,563,850
Weekly tickets (issued only to company's staff)	8,338

Make-up of trains.

The trains used for workmen are, with one exception, all ordinary trains, and are not specially made up for the purpose. The exception referred to is the train of 12 third-class coaches, which is used for the 5.32 a.m. trip, Wandsworth Road to Snow Hill, and also for the 7.10 a.m. trip, Penge to St. Paul's.

On the Main Line.

The 5.25 a.m. from Victoria has three first-class, three second-class, and six third-class carriages, and seats 290 third-class passengers.

The 6.0 a.m. from Holborn has one first-class, one second-class, and four third-class carriages and seats 200 third-class passengers.

The 5.14 a.m. from Penge has two first-class, one second-class, and seven third-class carriages and seats 350 third-class passengers.

The 6.9 a.m. from Penge has three first-class, two second-class, and six third class carriages and seats 300 third-class passengers.

The 6.59 a.m. from Penge has two first-class, one second-class, and six third-class carriages, and seats 300 third-class passengers.

The 7.10 a.m. from Penge has one first-class, one second-class, and 12 third-class carriages, and seats 600 third-class passengers.

The 7.18 a.m from Penge has three first-class, three second-class, and six third-class carriages, and seats 290 third-class passengers.

On the Metropolitan Extension.

The 4.0 a.m. from Victoria and 5.0 a.m. from Ludgate each have three first-class, three second-class, and eight third-class carriages, and seat 390 third-class passengers.

The 4.57 a.m. and 5.58 a.m. trains from Victoria each have three first-class, three second-class, and eight third-class carriages, and seat 390 third-class passengers.

The 5.0 a.m. from Victoria and the 5.43 and 5.57 a.m. trains from Holborn each have three first-class, three second-class, and six third-class carriages, and seat 290 third-class passengers.

The 5.28 a.m. and 6.2 a.m. trains from Victoria each have three first-class, three second-class, and four third-class carriages, and seat 190 third-class passengers.

The 5.32 a.m. train from Wandsworth Road consists of 12 third-class carriages and seats 600 third-class passengers.

The 6.11 a.m. train from Loughboro has six third-class carriages and seats 300 third-class passengers.

On the Greenwich Line.

The 5.18 a.m. train from Nunhead has three first-class, three second-class, and four third-class carriages, and seats 190 third-class passengers, and the 6.20 a.m. and 6.58 a.m. trains from Nunhead have similar accommodation.

Altogether, the total amount of third-class seating accommodation by the trains as shown above on Main Line, Metropolitan Extension, and the Greenwich Line is sufficient for 6,610 third-class passengers *daily*.

In case of need, the second-class carriages are also made use of for third-class passengers, to prevent overcrowding or passengers being left behind, the extra accommodation being equal to 130 for every three second-class vehicles, or a total of 2,080 extra on the trains before named.

There is therefore a total carrying capacity for 8,690 third-class passengers daily without overcrowding.

No. 2.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually running in the years 1883, 1890, and 1894 respectively, on the LONDON, CHATHAM, and DOVER RAILWAY.

Portion of Company's Line.	Details of Trains.								Remarks.
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
		M. C.		M. C.		M. C.		M. C.	
Main Line	Nil.	Nil.	5	36 60	6	44 20	7	60 17	The trains run to and from the London termini.
Metropolitan Extension	1	3 60	8	56 60	9	63 60	11	75 0	Do. do.
Crystal Palace Line	—	—	—	—	2	12 0	3	17 77	The trains run from Nunhead and Peckham Rye to St. Paul's, Ludgate Hill, and Holborn. Workmen's tickets are also issued from Nunhead and Peckham Rye to Victoria, the passengers changing trains at Loughboro' Junction.
Total	1	3 60	13	93 40	17	120 0	21	153 14	

Workmen's Trains actually running in April 1894.

Time.	From	To	Due to arrive At	Due to arrive At	Distance.	Daily Return Fare.	No. of Passenger Vehicles.	Description of Stock. 1st Class.	2nd Class.	3rd Class.	Amount of 3rd Class Seating Accommodation.
			ON THE MAIN LINE.								
A.M.				A.M.	M. C.	d.					
5 25	Victoria	Penge	Penge	5 48	7 15	4	12	3	3	6	290
6 0	Holborn	Do.	Do.	6 33	7 57	4	6	1	1	4	200
5 14	Penge	Victoria and Holborn	Victoria Holborn	5 45 5 50	3 78 7 57	4	10	2	1	7	350
6 9	Do.	Victoria and St. Paul's	Victoria St. Paul's	6 36 6 34	3 78 7 30	4	11	3	2	6	310
6 59	Do.	Holborn	Holborn	7 28	7 57	4	9	2	1	6	300
7 10	Do.	St. Paul's	St. Paul's	7 35	7 30	4	14	1	1	12	600
7 18	Do.	Victoria	Victoria	7 45	7 15	4	12	3	3	6	290
	7 trains.				60 17						2,330
			ON THE METROPOLITAN EXTENSION.								
A.M.				A.M.	M. C.						
4 0	Victoria	Holborn	Ludgate	4 36	7 26	2	14	3	3	8	390
4 57	Do.	Do.	Do.	5 32	7 26	2	14	3	3	8	390
5 0	Do.	Do.	Do.	5 36	7 26	2	12	3	3	6	290
5 32	Wandsworth Road	Snow Hill	Do.	5 55	5 36	2	12	—	—	12	600
5 28	Victoria	Do.	Do.	6 0	7 29	2	10	3	3	4	190
5 58	Do.	Holborn	Do.	6 31	7 26	2	14	3	3	8	390
6 2	Do.	Do.	Do.	6 36	7 26	2	10	3	3	4	190
6 11	Loughboro'	Do.	Do.	6 25	3 47	2	6	—	—	6	300
4 56	Holborn	Victoria	Victoria	5 39	7 26	2	14	3	3	8	390
5 43	Do.	Do.	Do.	6 21	7 23	2	12	3	3	6	290
5 57	Do.	Do.	Do.	6 39	7 26	2	12	3	3	6	290
	11 trains.				75 00						3,710
			ON THE GREENWICH LINE.								
A.M.				A.M.	M. C.						
5 18	Nunhead	Holborn	Holborn	5 43	5 75	4	10	3	3	4	190
6 20	Do.	Do.	Do.	6 50	5 75	4	10	3	3	4	190
6 58	Do.	Do.	Do.	7 26	5 75	4	10	3	3	4	190
	3 trains.				17 65						570
			RESUME.								
	On the Main Line			7 trains.	60 17	—	—	—	—	—	2,330
	„ Metropolitan Extension			11 do.	75 00	—	—	—	—	—	3,710
	„ Crystal Palace and Greenwich Line			3 do.	17 65	—	—	—	—	—	570
	Total			21	153 02						6,610

In case of need, to prevent overcrowding, or passengers being left behind, the second-class carriages are also made use of; this extra accommodation being equal to 130 passengers for every three vehicles.

No. 3.

METROPOLITAN RAILWAY COMPANY.

Statutory obligations

The statutory obligations of this Company are laid down in the usual terms in the following Acts:—

I.—*The Metropolitan Railway (Finsbury Circus Extension) Act*, 1861, 24 & 25 Vict. cap. 233.

Section 24 requires that one train shall be run every morning from Paddington to the station near Finsbury Circus, and one every evening from that station to Paddington, stopping at intermediate stations, at such hours in the morning and afternoon as may be most convenient for the labouring classes residing at or beyond Paddington, or at other places near the intermediate stations, at fares not exceeding one penny per passenger for each journey.

II.—*The Metropolitan Railway (Notting Hill and Brompton Extension) Act*, 1864, 27 & 28 Vict. cap. 291.

Section 45 requires that there shall be run, in connexion with the trains required to be run under the section of the Act of 1861, quoted above, one train every morning from Brompton to Paddington, and one train every evening from Paddington to Brompton, at such hours (not being later than seven in the morning or earlier than six in the evening) as may be most convenient for the labouring classes resident at or beyond Notting Hill, at fares not exceeding one penny per passenger over the whole or any part of the railway of the Company, and stopping at every intermediate station.

Section 46 limits the compensation for injury to passengers travelling with cheap tickets under the preceding section and section 24 of the Act of 1861 to a sum not exceeding one hundred pounds.

III.—*The Metropolitan Railway (Tower Hill Extension) Act*, 1864, 27 & 28 Vict. cap. 315.

Section 25 requires that there shall be run, in connexion with the trains required to be run under the section of the Act of 1861, one train every morning from Finsbury to Tower Hill and one train every evening from Tower Hill to Finsbury, at such hours (not being later than seven in the morning or earlier than six in the evening) as may be most convenient for the labouring classes, at fares not exceeding one penny per passenger for each journey over the whole or any part of the railway of the Company, and stopping at every intermediate station.

The same section limits the compensation for injury to passengers travelling with a ticket, the charge for which does not exceed one penny, to a sum not exceeding one hundred pounds.

IV.—*The Metropolitan and St. John's Wood Railway Act*, 1864, 27 & 28 Vict. cap. 303.

Section 89 requires that one train shall be run every morning from St. John's Wood to Baker Street, and one every evening from Baker Street to St. John's Wood, at such hours (not being later than seven in the morning or earlier than six in the evening) as may be most convenient for the labouring classes resident at or near St. John's Wood, at fares not exceeding one penny per passenger for each journey, and stopping at every intermediate station.

Note.—St. John's Wood is understood to include the St. John's Wood Road, Marlborough Road, and Swiss Cottage Stations only, as, although the Metropolitan Company issue workmen's tickets to and from all stations beyond Swiss Cottage to Harrow inclusive, they are under no statutory obligation so to do.

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The Company are running the following trains on the main Metropolitan, District, and Hammersmith lines :—

No.	Time of Departure.	From	Arriving at	Time of Arrival.
	A.M.	EAST TO WEST TRAINS.		A.M.
1	5 26	Aldgate	Mansion House	6 27
2	5 29	„	Hammersmith	6 8
3	5 37	Mansion House	Mansion House	6 47
4	5 49	Aldgate	Hammersmith	6 28
5	5 47	Mansion House	South Kensington	6 35
6	6 6	St. Mary's	Hammersmith	6 48
7	6 9	Cannon Street	South Kensington	6 55
8	6 19	Aldgate	Bishop's Road	6 43
9	6 29	„	„	6 53
10	6 33	„	Addison Road	7 16
11	6 29	Canon Street	South Kensington	7 15
12	6 36	St. Mary's	Bishop's Road	7 3
13	6 49	Aldgate	„	7 13
14	6 49	Cannon Street	South Kensington	7 35
15	7 3	Aldgate	Bishop's Road	7 27
16	6 59	Cannon Street	South Kensington	7 45
17	7 6	St. Mary's	Bishop's Road	7 33
18	7 19	Aldgate	„	7 43
19	7 19	Cannon Street	South Kensington	8 5
20	7 26	St. Mary's	Bishop's Road	7 53
21	7 33	Aldgate	„	7 57
22	7 36	St. Mary's	„	8 3

No.	Time of Departure.	From	Arriving at	Time of Arrival.
	A.M.			A.M.
23	7 39	Cannon Street	South Kensington	8 25
24	*8 1	Baker Street	Bishop's Road	8 7
25	*8 14	„	South Kensington	8 35
26	*8 20	Edgware Road	Bishop's Road	8 23
		WEST TO EAST TRAINS.		
1	5 48	Aldgate	Aldgate	6 58
2	5 25	Bishop's Road	„	5 50
3	5 15	Hammersmith	„	5 54
4	5 49	Farringdon Street	Mansion House	6 6
5	5 30	South Kensington	Aldgate	6 8
6	5 35	Hammersmith	St. Mary's	6 17
7	6 18	Aldgate	Mansion House	6 26
8	5 45	Addison Road	Aldgate	6 25
9	5 53	Hammersmith	„	6 32
10	6 0	South Kensington	Cannon Street	6 44
11	6 0	Addison Road	Aldgate	6 40
12	6 8	Hammersmith	St. Mary's	6 49
13	6 14	„	Aldgate	6 53
14	6 58	Aldgate	Cannon Street	7 4
15	6 30	South Kensington	„	7 14
16	6 29	Addison Road	Aldgate	7 10
17	6 34	Hammersmith	St. Mary's	7 17
18	6 50	South Kensington	Cannon Street	7 34
19	7 9	Bishop's Road	Aldgate	7 33
20	7 29	Farringdon Street	Cannon Street	7 44
21	7 16	Bishop's Road	Aldgate	7 40
22	7 19	„	St. Mary's	7 47
23	7 10	South Kensington	Cannon Street	7 54
24	7 29	Bishop's Road	Aldgate	7 53
25	7 20	South Kensington	Cannon Street	8 4
26	7 36	Bishop's Road	Aldgate	8 0
27	7 30	South Kensington	Cannon Street	8 14
28	7 40	„	„	8 24
29	7 39	Bishop's Road	St. Mary's	8 7
30	*8 21	Bishopsgate	„	8 27
31	*8 8	Baker Street	Cannon Street	8 34
32	*8 41	Bishopsgate	St. Mary's	8 48

On the Metropolitan Extension.

	A.M.	DOWN TRAINS.		A.M.
1	5 56	Baker Street	Harrow	6 23
2	6 9	„	„	6 37
3	6 36	Neasden	„	6 45
4	6 44	„	„	6 53
5	6 52	„	„	7 0
6	6 39	Baker Street	Neasden	6 58
7	6 49	„	„	7 8
8	7 9	„	Willesden	7 25
9	7 35	Neasden	Harrow	7 44
10	7 27	Baker Street	„	7 55
11	7 39	„	Willesden Green	7 55
12	8 14	„	Neasden	8 33
13	8 25	„	Harrow	8 53
		UP TRAINS.		
1	5 20	Neasden	Baker Street	5 40
2	5 40	„	„	6 0
3	6 10	„	„	6 30
4	6 25	„	„	6 45
5	6 37	Harrow	„	7 5
6	6 55	Neasden	„	7 15
7	7 6	Harrow	„	7 35
8	7 29	Willesden Green	„	7 45
9	7 35	Neasden	„	7 55
10	7 36	Harrow	„	8 5

* These trains only convey workmen booked through from Extension Stations.

Make-up of trains.

Make up of Trains.

—	First.	Composite.	Second.	Third.	Total.
On the Circle - -	1 coach, 60 passengers.	1 coach, 30 passengers first class, 40 passengers second class.	1 coach, 80 passengers.	3 coaches, 220 passengers.	6 coaches, 430 passengers.
On the Hammersmith Line.	1 coach, 60 passengers.	———	2 coaches, 159 passengers.	3 coaches, 235 passengers.	6 coaches, 454 passengers.
On the Extension Line	1 coach, 60 passengers.	1 coach, 30 passengers first class, 40 passengers second class.	1 coach, 70 passengers.	2½ coaches, 180 passengers.	5½ coaches, 380 passengers.

Workmen's return fares.

Since the last statements furnished the Board of Trade in 1890 the Metropolitan Company have considerably extended and varied their charges and facilities of travelling to the working classes.

On 1st June, 1892, the under-mentioned scale of charges was adopted generally throughout the Company's system between St. Mary's and Cannon Street in the east, South Kensington in the west, and Harrow on the Company's extension line north of Baker Street, viz. :—

	d.
Not exceeding 5 miles - - - -	2
Exceeding 5 but not exceeding 10 miles - -	4
„ 10 „ „ 15 „ - -	6

and at the same time workmen were allowed the privilege of taking tickets at any Metropolitan station within the area up to 7.30 a.m., and to travel from each such station to their destination by the next train leaving *after* 7.30 a.m.

Note.—This does not apply to bookings locally on the Eastern Joint Line. Workmen between these points being booked and conveyed only by specified trains in accordance with the District Company's practice.

From the same date the issue of weekly packets of tickets to workmen was adopted, at a charge based on the sum of the daily fares.

Subsequent to the foregoing, viz., on 1st May, 1894, it was considered desirable to revise the above arrangement as to charges, in order to make them more graduated, and to obviate the frequent complaints of passengers in regard to the abrupt advance in the fares from 2*d.* to 4*d.*, and from 4*d.* to 6*d.*, respectively, the following scale was therefore substituted for that previously operating within the area before mentioned, viz. :—

	d.
Not exceeding 4 miles - - - -	2
Exceeding 4 but not exceeding 7 miles - -	3
„ 7 „ „ 10 „ - -	4
„ 10 „ „ 13 „ - -	5
„ 13 „ „ 15 „ - -	6

The adoption of this latter scale, while increasing the fares in a few instances only, had the general effect of largely reducing them between numerous points.

The following arrangements for extended bookings and reduced fares have also been made since 1890.

1. With the Great Western Company, whereby the foregoing revised scale has been adopted for workmen's fares locally between stations on the Hammersmith and City, &c. Joint Lines (Bishop's Road to Hammersmith and Addison Road inclusive*), as also for bookings between stations on that line and Metropolitan, &c. stations on the Inner Circle and Whitechapel Extension to St. Mary's inclusive.

* This does not apply locally between Shepherd's Bush and Hammersmith, and Uxbridge Road and Addison Road.

The effect of this arrangement was to very largely decrease the then existing workmen's fares, and to extend the area for which the tickets were available, to embrace both Uxbridge Road and Addison Road.

2. With the Great Western Company, whereby workmen are now booked *from* Great Western Main Line Stations down to and including Southall, to all Metropolitan stations on the Inner Circle, Edgware Road to Cannon Street, and on the Whitechapel Extension to St. Mary's inclusive, at cheap return fares.

3. With the District Company, whereby workmen are now booked at cheap return fares, between all Metropolitan stations on the Inner Circle and stations on the District Branch Railways beyond Earl's Court, down to and including Putney Bridge and West Kensington respectively.

Workmen's return fares.

The return journey fares charged to workmen in respect of the foregoing trains are as follows:—

METROPOLITAN LOCAL and HAMMERSMITH and CITY JOINT.

The workmen's fares charged within this area, viz., St. Mary's and Cannon Street in the East, South Kensington in the West, and Harrow on the Extension, as well as locally between stations on the Hammersmith and City, &c. Joint Line, and between stations on that line and stations on the Metropolitan, &c. Lines on the Inner Circle and Whitechapel Extension, have been based strictly in accordance with the before-mentioned mileage scale, except between stations Aldgate to South Kensington and Bishop's Road inclusive, where they are charged in accordance with the before-mentioned statutory powers of the Company under their various Acts of Parliament, which limits the fares between the points in question to 2*d.* per return journey.

The following will indicate the maximum distances for which the various fares operate between these points, viz.:—

Between	Maximum Distance for which the Fares operate.	Fare.
	M. C.	*d.*
LOCALLY ON INNER CIRCLE, &C. LINE:—		
Aldgate and South Kensington	7 62	2
Monument and Notting Hill Gate	6 74	3
Cannon Street and South Kensington	8 59	4
INNER CIRCLE, &C. LINE TO EXTENSION LINE:—		
Kensington High Street and Marlboro' Road	3 79	2
Monument and Finchley Road	6 79	3
Portland Road and Harrow	9 77	4
Moorgate Street and Harrow	12 64	5
Cannon Street and Harrow	14 37	6
LOCALLY ON THE EXTENSION LINE:—		
Baker Street and Willesden Green	3 77	2
West Hampstead and Harrow	6 70	3
Baker Street and Harrow	9 34	4
INNER CIRCLE, &C. LINE TO HAMMERSMITH AND CITY, &C. LINE:—		
Edgware Road and Hammersmith	3 79	2
Moorgate Street and Uxbridge Road	6 78	3
Cannon Street and Hammersmith	9 44	4
LOCALLY ON THE HAMMERSMITH AND CITY, &C. LINE:—		
Bishops Road and Hammersmith	3 34	2
METROPOLITAN WITH DISTRICT STATIONS (INNER CIRCLE):—		
Aldgate and stations to Farringdon Street inclusive, also Notting Hill Gate, and all stations on the District Railway, Mansion House to Sloane Square (inclusive)	5 70	2
King's Cross and stations to Bayswater (inclusive) and Mansion House and stations to Sloane Square (inclusive)	6 49	3

Between	Maximum Distance for which the Fares operate.	Fare.
	M. C.	
METROPOLITAN WITH DISTRICT BRANCH LINE STATIONS:—		
Aldgate, Bayswater, and Notting Hill Gate and Earl's Court	6 19	2
Notting Hill Gate and West Brompton and West Kensington		
Bishopsgate and stations to Praed Street (inclusive) and Earl's Court	7 42	3
Baker Street and stations to Bayswater (inclusive) and West Brompton		
Aldgate and West Brompton		
Edgware Road and stations to Notting Hill Gate (inclusive) and Walham Green		
Edgware Road and stations to Notting Hill Gate (inclusive) and Parson's Green		
Praed Street and stations to Notting Hill Gate (inclusive) and Putney Bridge		
Edgware Road and stations to Bayswater (inclusive) and West Kensington		
Bishopsgate and stations to Portland Road (inclusive) and West Brompton		
Aldgate and stations to Baker Street (inclusive) and Walham Green	9 44	4
Aldgate and stations to Baker Street (inclusive) and Parson's Green		
Aldgate and stations to Edgware Road (inclusive) and Putney Bridge		
Aldgate and stations to Baker Street (inclusive) and West Kensington		
FROM GREAT WESTERN TO METROPOLITAN STATIONS:—		
Acton to Aldgate and stations to Edgware Road (inclusive)	9 16	4
Ealing to Aldgate and stations to Edgware Road (inclusive)	10 55	5
Acton to Mark Lane to Cannon Street (inclusive), Aldgate East, and St. Mary's	10 13	
Castle Hill to Aldgate and stations to Edgware Road (inclusive)	11 39	5½
Ealing to Mark Lane to Cannon Street (inclusive), Aldgate East, and St. Mary's	11 52	6
Hanwell and Southall to Aldgate and stations to Edgware Road (inclusive)	14 3	6
Castle Hill to Mark Lane to Cannon Street (inclusive), Aldgate East, and St. Mary's	12 36	6½
Hanwell and Southall to Mark Lane to Cannon Street (inclusive), Aldgate East, and St. Mary's	15 0	7

Conditions under which workmen's tickets are issued.

Both daily return tickets and weekly packets of return tickets are now issued, the latter being available locally between Metropolitan stations as well as between Metropolitan and District stations. The daily tickets are available for the day of issue only, the tickets from the weekly packets being available for use on any day within the week for which they are issued. Workmen's tickets are available for use in third-class carriages, although the Company do, when necessary, recognise their use in second-class carriages.

The tickets are issued upon the condition that the liability of the Company in the case of injury to the holder is limited to a sum not exceeding 100*l*.

They are issued without restriction to any person, male or female, applying for them, and are available at intermediate stations between those to and from which issued.

The luggage allowed is limited to hand luggage.

The trainage facilities at present afforded to workmen are very largely in excess of those afforded at the date the last statements were furnished to the Board of Trade (1890), for instead of 11 down and 12 up main line and Hammersmith trains, and 2 up and 1 down St. John's Wood, &c. Extension trains running at that date, there are at the present time running 26 down and 32 up main line and Hammersmith trains, and 12 down and 9 up St. John's Wood, &c. Extension trains.

This increased service of workmen's trains is run continuously throughout the year, in order to enable workmen to reach their work regularly all the year round.

Full information as to the times at which the trains are run is to be found in the published time tables of the companies, and on the large bills exhibited at the stations.

Number of Workmen's Tickets issued from and to Metropolitan Stations in 1893.

The under-mentioned indicates the number of tickets issued from and to Metropolitan stations during the month of October 1893.

Number of workmen's tickets issued from and to Metropolitan stations in 1893.

Descriptions of Tickets issued.	Number of Tickets issued.	Remarks.
Metropolitan Local	178,164	Includes 3,280 packets of weekly workmen's tickets.
,, with Eastern Joint	20,030	
,, ,, Western ,,	67,773	
,, ,, District	33,687	
,, ,, Hammersmith	37,512	
Total	337,166	

The total number (approximately) of tickets issued during the year 1893 was 4,045,992, including 33,250 packets of weekly tickets.

The holders of workmen's tickets are allowed to perform the return journey by any train after 12 noon.

Availability of workmen's return tickets.

No. 3.

Statement showing the Workmen's Trains required to be run by Special Act of Parliament, and also those actually running in the Years 1883, 1890, and 1894 respectively on the Metropolitan Railway.

Portion of Company's Line.	Details of Trains.							
	Required by Special Acts.		Running in 1883.*		Running in 1890.*		Running in 1894.*	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.
EAST TO WEST.		M. C.		M. C.		M. C.		M. C.
Main Line	Nil	Nil	2	19 0	8	65 20	22	146 20
City and Hammersmith	Nil	Nil	2	18 0	3	26 20	4	34 60
Total	Nil	Nil	4	37 0	11	91 40	26	181 0
WEST TO EAST.								
Main Line	1	7 60†	4	32 40	6	43 60	23	134 40
City and Hammersmith	Nil	Nil	2	18 0	6	49 60	9	78 0
Total	1	7 60	6	50 40	12	93 40	32	212 40
EXTENSION LINE.								
Up	1	1 60	1	5 20	2	10 40	10	64 0
Down	Nil	Nil	1	5 20	1	5 20	13	78 60
Total	1	1 60	2	10 40	3	15 60	23	142 60
Grand Total	2	9 40	12	98 0	26	200 60	81	536 20

* For details, *see* attached statements.

† In the report to the Board of Trade by Major Marindin, R.E., in February 1883, the Metropolitan mileage is calculated from South Kensington to Trinity Square (Tower Hill). The District Company, however, claimed under the City Lines and Extensions Act, 1879, that the line between Aldgate and Trinity Square formed part of the railway authorised by that Act, and that section of railway has accordingly, since 1884, been amalgamated with the City Lines. The Metropolitan Company's mileage is therefore now calculated from Aldgate to South Kensington only.

These trains and mileages are taken in one direction only, workmen being allowed to return by any ordinary train after 12 noon.

Statement showing the Details of Mileage and Trains Running in 1883.

Trains.	Metropolitan.	Western Joint (Metropolitan and District).	District.	Great Western.	Hammersmith and City (Metropolitan and Great Western).	Total.
East to West.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
City and Main Line. Aldgate to Mansion House	6 58	1 11	4 4	—	—	11 73
City and Main Line. Moorgate Street to South Kensington.	6 3	1 9	—	—	—	7 12
City and Hamrsth. Tower of London to Hammersmith.	5 41	—	—	1 0	2 34	8 75
City and Hamrsth. Tower of London to Hammersmith.*	5 41	—	—	1 0	2 34	8 75
Total	23 63	2 20	4 4	2 0	4 68	36 75
West to East.						
Main Line. Bishops Road to Tower of London.	5 41	—	—	—	—	5 41
Main Line. South Kensington to Aldgate.	6 58	1 9	—	—	—	7 67
Main Line. Gloucester Road to Aldgate	6 58	53	—	—	—	7 31
Main Line. Mansion House to Aldgate	6 58	1 11	4 4	—	—	11 73
City and Hamrsth. Hammersmith to Tower of London.	5 41	—	—	1 0	2 34	8 75
City and Hamrsth. Hammersmith to Tower of London.*	5 41	—	—	1 0	2 34	8 75
Total	36 57	2 73	4 4	2 0	4 68	50 42

* These trains were run during the summer months only.

St. John's Wood Line.

	Metropolitan. M. C.
Up.—Neasden to Baker Street	5 18
Down.—Baker Street to Neasden	5 18
Total	10 36

Statement showing the Details of Mileage and Trains Running in 1890.

Trains.	Metropolitan.	Eastern Joint (Metropolitan and District).	Western Joint (Metropolitan and District).	District.	Great Western.	Hammersmith and City (Metropolitan and Great Western).	Total.
East to West.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
Main Line. Aldgate to Mansion House	6 58	—	1 11	4 4	—	—	11 73
Main Line. Mansion House to Mansion House	6 58	1 7	1 11	4 4	—	—	13 0
Main Line. „ South Kensington	6 58	1 7	1 9	0 6	—	—	9 0
Main Line. Aldgate to South Kensington	6 58	—	1 9	—	—	—	7 67
Main Line. „ Bishop's Road	5 15	—	—	—	—	—	5 15
Main Line. „ „	5 15	—	—	—	—	—	5 15
Main Line. „ „	5 15	—	—	—	—	—	5 15
Main Line. „ South Kensington	6 58	—	1 9	—	—	—	7 67
City & Hmsth. „ Hammersmith	5 15	—	—	—	1 0	2 34	8 49
City & Hmsth. „ „	5 15	—	—	—	1 0	2 34	8 49
City & Hmsth. St. Mary's to „	5 18	0 39	—	—	1 0	2 34	9 11
Total	64 63	2 53	5 49	8 14	3 0	7 22	91 41

	Trains.	Metropolitan.	Eastern Joint (Metropolitan and District).	Western Joint (Metropolitan and District).	District.	Great Western.	Hammersmith and City (Metropolitan and Great Western).	Total.
West to East.		M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
Main Line.	South Kensington to Aldgate -	6 58	—	1 9	—	—	—	7 67
	Aldgate to Aldgate - -	6 58	1 7	1 11	4 4	—	—	13 0
	Farringdon St. to Mansion House	1 39	1 7	—	0 6	—	—	2 52
	South Kensington to Aldgate -	6 58	—	1 9	—	—	—	7 67
	„ „ -	6 58	—	1 9	—	—	—	7 67
	Edgware Road to „ -	4 53	—	—	—	—	—	4 53
City and Hammersmith.	Hammersmith „ „ -	5 15	—	—	—	1 0	2 34	8 49
	„ „ St. Mary's -	5 18	0 39	—	—	1 0	2 34	9 11
	Latimer Road „ Aldgate -	5 15	—	—	—	1 0	0 78	7 13
	Hammersmith „ „ -	5 15	—	—	—	1 0	2 34	8 49
	Latimer Road „ „ -	5 15	—	—	—	1 0	0 78	7 13
	Hammersmith „ St. Mary's -	5 18	0 39	—	—	1 0	2 34	9 11
	Total - -	64 20	3 12	4 38	4 10	6 0	11 52	93 52

St. John's Wood Line.

	Metropolitan.
	M. C.
Up.—Neasden to Baker Street - - - - - -	5 18
„ „ „ - - - - - -	5 18
Down.—Baker Street to Neasden - - - - -	5 18
Total - - - - -	15 54

Statement showing the Details of Mileage and Trains Running in 1894.

	Trains.	Metropolitan.	Eastern Joint (Metropolitan and District Joint).	Western Joint (Metropolitan and District Joint).	District.	Great Western.	Hammersmith and City (Metropolitan and Great Western Joint).	Total.
	EAST TO WEST.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
Main Line	Aldgate to Mansion House - -	6 58	—	1 11	4 4	—	—	11 73
	Mansion House to Mansion House -	6 58	1 7	1 11	4 4	—	—	13 0
	Mansion House to South Kensington	6 58	1 7	1 9	0 6	—	—	9 0
	Cannon Street to South Kensington -	6 58	0 78	1 9	—	—	—	8 65
	Aldgate to Bishop's Road - -	5 15	—	—	—	—	—	5 15
	Aldgate to Bishop's Road - -	5 15	—	—	—	—	—	5 15
	Cannon Street to South Kensington -	6 58	0 78	1 9	—	—	—	8 65
	St. Mary's to Bishop's Road - -	5 18	0 39	—	—	—	—	5 57
	Aldgate to Bishop's Road - -	5 15	—	—	—	—	—	5 15
	Cannon Street to South Kensington -	6 58	0 78	1 9	—	—	—	8 65
	Aldgate to Bishop's Road - -	5 15	—	—	—	—	—	5 15
	Cannon Street to South Kensington -	6 58	0 78	1 9	—	—	—	8 65
	St. Mary's to Bishop's Road - -	5 18	0 39	—	—	—	—	5 57
	Aldgate to Bishop's Road - -	5 15	—	—	—	—	—	5 15
	Cannon Street to South Kensington -	6 58	0 78	1 9	—	—	—	8 65
	St. Mary's to Bishop's Road - -	5 18	0 39	—	—	—	—	5 57
	Aldgate to Bishop's Road - -	5 15	—	—	—	—	—	5 15
	St. Mary's to Bishop's Road - -	5 18	0 39	—	—	—	—	5 57
	Cannon Street to South Kensington -	6 58	0 78	1 9	—	—	—	8 65
	Baker Street to Bishop's Road -	1 8	—	—	—	—	—	1 8
	Baker Street to South Kensington -	3 60	—	—	—	—	—	3 60
	Edgware Road to Bishop's Road -	0 48	—	—	—	—	—	0 48
City and Hammersmith.	Aldgate to Hammersmith - -	5 15	—	—	—	1 0	2 34	8 49
	Aldgate to Hammersmith - -	5 15	—	—	—	1 0	2 34	8 49
	St. Mary's to Hammersmith - -	5 18	0 39	—	—	1 0	2 34	9 11
	Aldgate to Addison Road - -	5 15	—	—	—	1 53	1 36	8 24
26 Trains.	Total - - -	138 63	10 37	10 5	8 14	4 53	8 58	180 70

	Trains.	Metropolitan.	Eastern Joint (Metropolitan and District Joint).	Western Joint (Metropolitan and District Joint).	District.	Great Western.	Hammersmith and City (Metropolitan and Great Western Joint).	Total.
	WEST TO EAST.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
Main Line	Aldgate to Aldgate	6 58	1 7	1 11	4 4	—	—	13 0
	Bishop's Road to Aldgate	5 15	—	—	—	—	—	5 15
	Farringdon Street to Mansion House	1 39	1 7	—	0 6	—	—	2 52
	South Kensington to Aldgate	6 58	—	1 9	—	—	—	7 67
	Aldgate to Mansion House	0 5	1 7	—	0 6	—	—	1 18
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	Aldgate to Cannon Street	0 5	0 78	—	—	—	—	1 3
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	Bishop's Road to Aldgate	5 15	—	—	—	—	—	5 15
	Farringdon Street to Cannon Street	1 39	0 78	—	—	—	—	2 37
	Bishop's Road to Aldgate	5 15	—	—	—	—	—	5 15
	Bishop's Road to St. Mary's	5 18	0 39	—	—	—	—	5 57
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	Bishop's Road to Aldgate	5 15	—	—	—	—	—	5 15
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	Bishop's Road to Aldgate	5 15	—	—	—	—	—	5 15
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	South Kensington to Cannon Street	6 58	0 78	1 9	—	—	—	8 65
	Bishop's Road to St. Mary's	5 18	0 39	—	—	—	—	5 57
	Bishopsgate to St. Mary's	0 37	0 39	—	—	—	—	0 76
	Baker Street to Cannon Street	4 13	0 78	—	—	—	—	5 11
	Bishopsgate to Mary's	0 37	0 39	—	—	—	—	0 76
City and Hammersmith.	Hammersmith to Aldgate	5 15	—	—	—	1 0	2 34	8 49
	Hammersmith to St. Mary's	5 18	0 39	—	—	1 0	2 34	9 11
	Addison Road to Aldgate	5 15	—	—	—	1 53	1 36	8 24
	Hammersmith to Aldgate	5 15	—	—	—	1 0	2 34	8 49
	Addison Road to Aldgate	5 15	—	—	—	1 53	1 36	8 24
	Hammersmith to St. Mary's	5 18	0 39	—	—	1 0	2 34	9 11
	Hammersmith to Aldgate	5 15	—	—	—	1 0	2 34	8 49
	Addison Road to Aldgate	5 15	—	—	—	1 53	1 36	8 24
	Hammersmith to St. Mary's	5 18	0 39	—	—	1 0	2 34	9 11
32 Trains.	Total	151 72	16 34	10 3	4 16	10 79	18 72	212 36

Metropolitan Extension.

	Metropolitan Mileage.
UP TRAINS.	M. C.
Neasden to Baker Street	5 21
Neasden to Baker Street	5 21
Neasden to Baker Street	5 21
Neasden to Baker Street	5 21
Harrow to Baker Street	9 37
Neasden to Baker Street	5 21
Harrow to Baker Street	9 37
Willesden Green to Baker Street	4 0
Neasden to Baker Street	5 21
Harrow to Baker Street	9 37
10 Trains. Total	63 77
DOWN TRAINS.	M. C.
Baker Street to Harrow	9 37
Baker Street to Harrow	9 37
Neasden to Harrow	4 22
Neasden to Harrow	4 22
Neasden to Harrow	4 22
Baker Street to Neasden	5 21
Baker Street to Neasden	5 21
Baker Street to Willesden Green	4 0
Neasden to Harrow	4 22
Baker Street to Harrow	9 37
Baker Street to Willesden Green	4 0
Baker Street to Neasden	5 21
Baker Street to Harrow	9 37
13 Trains. Total	78 59
23 Trains. Grand Total	142 56

No. 4.

METROPOLITAN DISTRICT RAILWAY COMPANY.

Statutory obligations.

The statutory obligations of this Company are laid down in the usual terms in the following Acts, viz.:—

I.—*The Metropolitan District Railway Act*, 1864, 27 & 28 Vict. cap. 322.

Section 90 requires that *one* train shall be run every morning from Kensington to Trinity Square, and *one* every evening from Trinity Square to Kensington, at such hours, not being later than seven in the morning or earlier than six in the evening, as may be most convenient for the labouring classes, &c., at fares not exceeding one penny per passenger for each journey, and stopping at every station.

II.—*The Metropolitan District Railway Act*, 1870, 33 & 34 Vict. cap. 94.

Section 16 is to the effect that the above section 90 of the Act of 1864 shall read and have effect as though the words "Bread Street" and "Queen Street" stations were inserted therein in addition to "Trinity Square"; and it also limits the liability of the Company under any claim for compensation for injury or otherwise, in respect of passengers travelling with cheap tickets, to a sum not exceeding one hundred pounds.

Note.—Kensington is understood to include Kensington High Street and Earls Court stations.

III.—*The Metropolitan District Railway Act*, 1884, 47 & 48 Vict. cap. 229.

Section 23 further limits the liability of the Company under any claim for compensation for injury or otherwise in respect of passengers travelling with workmen's tickets issued at a rate not exceeding one penny for the single journey, whether such tickets are issued by the Company, or by any Company having arrangements for booking over the Company's railways.

IV.—*The Metropolitan District Railway Act*, 1893, 56 & 57 Vict. cap. 197.

Section 12 further limits the liability of the Company under any claim for compensation for injury or otherwise in respect of passengers travelling with workmen's tickets issued at a rate not exceeding for the single journey the following (that is to say):—

For distances up to and including four miles - - -	1*d.*
Beyond four miles, up to and including six miles - -	1½*d.*
„ six miles, up to and including eight miles - -	2*d.*
„ eight miles, up to and including ten miles - -	2½*d.*
„ ten miles, up to and including twelve miles - -	3*d.*

For distances exceeding twelve miles fares not exceeding ½*d.* for every two miles, or part of such two miles.

Make-up of trains.

The trains used are those in regular working throughout the day, and are made up as follows:—

2 first-class carriages, seating 80 passengers	3 second-class carriages, seating 140 passengers	4 third-class carriages, seating 190 passengers

or nine carriages in all, seating 410 passengers.

Some of the trains running between High Street (Kensington) and Putney Bridge and Wimbledon, and also between High Street (Kensington) or Earls Court and Chiswick Park and Acton Green and Hounslow Barracks, are made up as follows:—

1 first-class carriage, seating 40 passengers	2 second-class carriages, seating 90 passengers	2 or 3 third-class carriages, seating 90 or 140 passengers respectively,

or five or six carriages in all, as the case may be, seating 220 and 270 passengers respectively.

Other trains are made up as follows:—

1 first-class carriage, seating 40 passengers	1 second-class carriage, seating 40 passengers	2 third-class carriages, seating 90 passengers

or four carriages in all, seating 170 passengers.

The Company is running every morning on week-days the following trains for workmen :—

WEST TO EAST.

—	Starting from: Wimbledon.	Putney Bridge.	Richmond.	Hounslow Barracks.	Ealing.	Hammersmith.	Uxbridge Road.	South Kensington.	High Street (Kensington).	Mansion House.	Route.	Arriving at	Stations for which Workmen's Tickets are issued.
Inner Circle	—	—	—	—	—	—	—	—	—	5.37	Mark Lane	Aldgate 5.46	Mansion House to Metropolitan Railway stations, *viâ* Aldgate.
Main Line and Inner Circle	—	—	—	—	—	(West Kens.) 5.19	—	—	—	5.47	Do.	Do. 5.56	West Kensington and intermediate stations to High Street (Kensington) and to Mark Lane inclusive; also District Railway Stations to Metropolitan Railway stations, *viâ* Mark Lane.
Main Line	—	—	—	—	—	5.20	—	—	—	—	Do.	St. Marys 6.5 (Whitechapel)	Hammersmith and intermediate stations to High Street (Kensington) and to St. Marys (Whitechapel) inclusive.
Main Line and Inner Circle	—	5.31	—	—	—	—	—	—	—	—	Do.	Aldgate 6.16	Putney Bridge and intermediate stations to High Street (Kensington) and to Mark Lane inclusive; also from District Railway stations to Metropolitan Railway stations, *viâ* Mark Lane.
Main Line	—	—	—	—	—	5.45	—	—	—	—	Victoria	Mansion House 6.17	Hammersmith and intermediate stations to High Street (Kensington) and to Mansion House inclusive.
Main Line	5.38	5.50	—	—	—	—	—	—	—	—	Mark Lane	Whitechapel (Mile End) 6.37	Wimbledon and intermediate stations to High Street (Kensington) and to Whitechapel (Mile End) inclusive.
Inner Circle	—	—	—	—	—	—	—	—	6.0	—	Do.	Aldgate 6.36	Notting Hill Gate and other Metropolitan Railway stations to District Railway stations, *viâ* High Street (Kensington), and from High Street (Kensington) and intermediate stations to Mark Lane inclusive; and also from District Railway stations to Metropolitan Railway stations, *viâ* Mark Lane.
Main Line	—	—	—	—	5.42	5.59	—	—	—	—	Do.	St. Marys 6.42 (Whitechapel)	Ealing (Broadway) and intermediate stations to High Street (Kensington) and to St. Marys (Whitechapel) inclusive.
Main Line	—	—	—	—	—	6.8	—	—	—	—	Do.	Whitechapel (Mile End) 6.53	Hammersmith and intermediate stations to High Street (Kensington) and to Whitechapel (Mile End) inclusive.
Inner Circle	—	—	—	—	—	—	—	—	6.20	—	Victoria	MarkLane 6.53	Notting Hill Gate and other Metropolitan Railway stations to District Railway stations, *viâ* High Street (Kensington), and also from High Street (Kensington) and intermediate stations to Mark Lane inclusive.
	—	—	—	—	—	—	—	—	6.30	—	Do.	Do. 7.3	High Street (Kensington) and intermediate stations to Mark Lane inclusive.
	—	6.20	—	—	—	—	—	—	—	—	Do.	St. Marys 7.5 (Whitechapel)	Putney Bridge (Fulham) and stations to High Street (Kensington) and to St. Marys (Whitechapel) inclusive.
	—	—	—	—	—	6.29	6.27	—	—	—	Do.	Mansion House 7.4 connecting at Mansion House with 7.8a.m. to Whitechapel (Mile End)	Hammersmith and intermediate stations to High Street (Kensington) and to Mansion House inclusive; also Uxbridge Road and intermediate stations to High Street (Kensington) and to Whitechapel (Mile End) inclusive.
	—	—	—	—	—	6.34	—	—	—	—	Mark Lane	Whitechapel (Mile End) 7.22	Hammersmith and West Kensington *only* to High Street (Kensington) and to stations intermediate between Earls Court and Whitechapel (Mile End) inclusive.
	—	—	—	6.27	—	—	—	—	—	—	Do.	St. Marys 7.42 (Whitechapel).	Hounslow Barracks and stations to South Ealing *only* — To Hammersmith and intermediate stations to High Street (Kensington) and to St. Marys and Whitechapel (Mile End) inclusive respectively.
Main Line	—	—	—	7.6	—	—	—	—	—	—	Do.	Whitechapel (Mile End) 8.23	
	7.8	—	7.10	—	—	—	—	—	—	—	Do.	St. Marys 8.13 (Whitechapel)	Richmond *only*, and Wimbledon and stations to East Putney *only*
	7.36	—	—	—	—	—	—	—	—	—	Do.	Whitechapel (Mile End) 8.37	Wimbledon and stations to East Putney *only* — To Hammersmith and intermediate stations to High Street (Kensington) and to Whitechapel (Mile End) inclusive.
	—	—	—	7.36	—	—	—	—	—	—	Do.	Do. 8.53	Hounslow Barracks and stations to South Ealing *only* — To Hammersmith and intermediate stations to High Street (Kensington) and to Whitechapel (Mile End) inclusive.

☞All the foregoing trains stop at all intermediate stations, and workmen's tickets are issued from intermediate stations, unless shown above to the contrary.

The Company is also running every morning on week-days the following trains for workmen :— Details of trains running.

East to West.

	From		Route.	Arriving at High Street (Kensington).	Hammersmith.	Hounslow Barracks.	Richmond.	Putney Bridge.	Wimbledon.	Stations for which Workmen's Tickets are issued.
Inner Circle.	South Kensington	5.30	Gloucester Road	5.35	—	—	—	—	—	South Kensington and Gloucester Road to High Street (Kensington).
	Ditto	6.0	Ditto	6.5	—	—	—	—	—	
	Aldgate	5.48	Victoria	6.25	—	—	—	—	—	Aldgate to District Stations and also Mark Lane and intermediate District stations as far as High Street (Kensington); and from District Railway stations to Notting Hill Gate and other Metropolitan Railway stations *viâ* High Street (Kensington).
Main Line.	High Street (Kensington)	6.2	Earls Court	—	—	—	—	6.14	—	High Street (Kensington) and intermediate stations to Putney Bridge (Fulham) inclusive.
	Whitechapel (Mile End)	5.36	Ditto	—	6.20	6.53	—	—	—	Whitechapel (Mile End) and intermediate stations, including High Street (Kensington), to Hammersmith. Also Whitechapel (Mile End) and intermediate stations, including High Street (Kensington), to Hammersmith *to* South Ealing and stations to Hounslow Barracks inclusive.
	Whitechapel (Mile End)	5.50	Ditto	—	6.40	—	6.53	—	—	Whitechapel (Mile End) and intermediate stations, including High Street (Kensington), to Hammersmith and to Wimbledon inclusive. Also Whitechapel (Mile End) and intermediate stations, including High Street (Kensington), to Hammersmith *to* South Ealing and stations to Hounslow Barracks, and also *to* Richmond only.
	Connecting at— Earls Court with	6.30	Walham Green	—	—	—	—	6.39	6.51	
	Hammersmith with	6.40	Mill Hill Park	—	—	7.18	—	—	—	
	Earls Court	6.40	Walham Green	—	—	—	—	6.49	—	Earls Court and intermediate stations to Putney Bridge (Fulham) inclusive.
	Mansion House	6.22	Earls Court	—	6.56	—	—	—	—	Mansion House and intermediate stations, including High Street (Kensington) to Hammersmith inclusive.
Inner Circle.	Farringdon Street	5.49	Victoria	6.35	—	—	—	—	—	Farringdon Street and Metropolitan Railway stations to Aldgate *to* District Railway stations *viâ* Mark Lane, and also Mark Lane and intermediate District Railway stations as far as High Street (Kensington); and from District Railway stations to Metropolitan Railway stations *viâ* High Street (Kensington).
	Aldgate	6.18	Ditto	6.53	—	—	—	—	—	Aldgate and Metropolitan Railway stations west thereof to District Railway stations *viâ* Mark Lane, and also Mark Lane and intermediate District Railway stations as far as High Street (Kensington).
	Bishopsgate	6.35	Ditto	(Sloane Square) 7.4	—	—	—	—	—	Bishopsgate and Aldgate only to stations as far as Sloane Square.
Main Line.	St. Marys (Whitechapel)	6.22	Ditto	—	7.5	—	7.23	—	—	St. Marys (Whitechapel) and intermediate stations, including High Street (Kensington), to Hammersmith and to West Brompton and stations to Wimbledon inclusive; and also St. Marys and intermediate stations, including High Street (Kensington), to Hammersmith *to* Richmond only.
	Connecting at— Mansion House	6.40	Walham Green	—	—	—	—	7.15	7.27	
	St. Marys (Whitechapel)	6.52	Victoria	—	—	—	7.53	—	—	St. Marys (Whitechapel) and intermediate stations, including High Street (Kensington), to Hammersmith *to* Richmond only.
	Whitechapel (Mile End)	6.59	Ditto	—	—	8.18	—	—	—	Whitechapel (Mile End) and intermediate stations, including High Street (Kensington), to Hammersmith *to* South Ealing and stations to Hounslow Barracks only.
	St. Marys (Whitechapel)	7.22	Ditto	—	—	—	8.22	—	—	St. Marys (Whitechapel) and intermediate stations, including High Street (Kensington), to Hammersmith *to* Richmond only.

All the foregoing trains stop at all intermediate stations, and workmen's tickets are issued from intermediate stations unless shown above to the contrary.

Fares.

The return fares for workmen's tickets over the Company's own railways (except where limited by the 1864 Act to one penny each journey) are fixed in accordance with the scale set out in the Company's 1893 Act, *i.e.*, between Whitechapel (Mile End), on the one hand, and High Street (Kensington), Putney Bridge, and Hammersmith and Ealing respectively on the other, but in several cases *lower* fares are charged than the scale referred to would give.

The return fares for workmen's tickets between stations on the Company's line and stations on other Companies' railways vary according to the districts served. They are :—

Between	Whitechapel (Mile End) and stations to High Street (Kensington), and to Putney Bridge and Hammersmith respectively,	and	Hounslow and Metropolitan Company's line :— South Ealing and stations to Hounslow Barracks inclusive,	Fares vary from 6*d.* to 1*s.*
Between	Ditto	and	Stations on L. & S. W. Railway :— Richmond line :— Ravenscourt Park and Turnham Green;	2*d.* to 5*d.*
			Richmond -	6*d.* to 10*d.*
			Wimbledon line :— East Putney and stations to Wimbledon.	5*d.* to 7*d.*

Note.—Workmen's tickets are not issued *from* West Brompton and stations to Putney Bridge *to* Richmond viâ District Railway.

Between	District Railway stations :—Mark Lane, West Kensington, and Putney Bridge, and stations intermediate respectively, to High Street (Kensington),	and	Stations on Metropolitan Railway :— Aldgate to Notting Hill Gate, including Bishops Road,	2*d.* or 3*d.*

The fares given above are for *daily* tickets, but with a few exceptions workmen are enabled to purchase on Saturdays or Sundays a sufficient number of daily tickets for use in the following week. No reduction is made in the charge for the daily tickets so issued.

Availability of tickets.

Workmen are not allowed to use these tickets for the return journey by any train before 12 o'clock noon, nor are such tickets transferable.

Workmen's tickets are available for the day of issue only, and are issued to any person applying for them. They are available at intermediate stations between those to and from which issued, and in some cases also beyond if the fares be the same; but in other cases, because other companies are interested in the traffic, the workmen, when travelling to stations beyond those for which their tickets are issued, pay excess fare in same way as any other passengers.

Number of tickets issued.

During the months of September and October 1893 there were issued return tickets, printed "Workman's Ticket," as below :—

Between District stations and District stations - -	198,310
From District stations to South-Western stations -	4,981
„ South-Western stations to District stations - -	10,782
„ District stations to Metropolitan stations - -	15,008
„ Metropolitan stations to District stations - -	55,820
Total - - -	284,901

The total number *issued at* District stations in 1893 was 1,233,700.

—	Miles	Chains.
Main Line—		
Whitechapel (Mile End) to Hammersmith - - -	8	33
„ „ Putney Bridge - -	8	79
„ „ Hounslow Barracks - -	16	70
„ „ Richmond - - -	13	13
„ „ Wimbledon - - -	12	36
Inner Circle—		
Aldgate to High Street (Kensington), *viâ* Victoria -	6	24
Aldgate to Aldgate (*i.e.*, length of whole of Inner Circle) -	13	0

Distances.

Metropolitan District Railway,
Manager's Office,
Parliament Mansions, S.W.
26th July 1894.

ALFRED POWELL,
Manager.

STATEMENT showing the MORNING WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT and also those actually running on the METROPOLITAN DISTRICT RAILWAY in the Years 1883, 1890, and 1894 respectively.

Portion of Company's Line.	Details of Trains.								Remarks.
	Required by Special Acts (each Week Day).		Running in 1883 (each Week Day).		Running in 1890 (each Week Day).		Running in 1894 (each Week Day).		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
		M. C.		M. C.		M. C.		M. C.	
INNER CIRCLE.									
FROM WEST TO EAST :—									The Metropolitan District Railway Company *are not required to run any train* in the morning *from East to West*, and one only in the evening, nevertheless they run, on the Inner Circle Section alone, *seven* trains in the morning from East to West, and *every train* after 12 noon, *in both directions*, is available for workmen to make their return journey.
High Street (Kensington) to Mansion House.	1	5 15	2	10 30	—	—	—	—	
High Street (Kensington) to Aldgate.	—	—	—	—	3	18 66	3	18 66	
South Kensington to Aldgate -	—	—	—	—	1	5 16	—	—	
*Putney Bridge to Aldgate -	—	—	—	—	—	—	1	8 19	
Mansion House to Aldgate - -	—	—	—	—	2	2 20	1	1 10	
*West Kensington to Aldgate -	—	—	—	—	—	—	1	6 63	
FROM EAST TO WEST :—									
Mansion House to High Street (Kensington).	—	—	1	5 15	—	—	—	—	
Aldgate to High Street (Kensington).	—	—	—	—	3	18 66	3	18 66	
Aldgate to Sloane Square - -	—	—	—	—	(*a*)1	4 34	(*a*)1	4 34	(*a*) Workmen are booked by this train from Bishopsgate and Aldgate *only*.
South Kensington to High Street (Kensington).	—	—	—	—	2	2 4	2	2 4	
Total - - -	1	5 15	3	15 45	12	51 46	12	60 22	
Less miles run on Main Line (transferred below) :—									
*Putney Bridge to "B" Box Junction.	—	—	—	—	—	—	—	2 37	
*West Kensington to "B" Box Junction.	—	—	—	—	—	—	—	1 1	
Total Inner Circle - -	1	5 15	3	15 45	12	51 46	12	56 64	

Portion of Company's Line.	Details of Trains.								Remarks.
	Required by Special Acts (each Week Day).		Running in 1883 (each Week Day).		Running in 1890 (each Week Day).		Running in 1894 (each Week Day).		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
MAIN LINE.									
FROM WEST TO EAST:—									
Hounslow Barracks to Whitechapel (Mile End).	—	—	—	—	—	—	(*b*)2	33 60	(*b*) Workmen are booked *from* Hounslow Line stations *only* by these trains.
Hounslow Barracks to St. Marys	—	—	—	—	—	—	(*b*)1	16 50	
Hounslow Barracks to Mansion House.	—	—	—	—	(*b*)2	30 6	—	—	
Ealing to St. Marys	—	—	—	—	—	—	1	12 39	
Richmond to St. Marys	—	—	—	—	—	—	(*c*)1	12 73	(*c*) Workmen are booked *from* Richmond *only* by this train.
Richmond to Mansion House	—	—	—	—	(*c*)1	11 25	—	—	
Hammersmith to Whitechapel (Mile End).	—	—	—	—	—	—	(*d*)3	25 19	(*d*) Workmen are booked *from* Hammersmith and West Kensington *only* by one of these trains.
Hammersmith to St. Marys	—	—	—	—	2	16 26	1	8 13	
Hammersmith to Mansion House	—	—	1	6 46	—	—	1	6 46	
West Kensington to Mansion House.	—	—	—	—	1	5 56	—	—	
Wimbledon to Whitechapel (Mile End).	—	—	—	—	(*e*)2	24 72	(*e*)2	24 72	(*e*) Workmen are booked *from* Wimbledon Line stations *only* by one of these trains.
Wimbledon to High Street (Kensington).	—	—	—	—	—	—	(*f*)1	6 20	(*f*) Workmen are booked *from* Wimbledon Line stations *only* by this train, but, by changing at Earls Court, to all stations to St. Marys inclusive.
Putney Bridge to St. Marys	—	—	—	—	1	8 59	1	8 59	
Uxbridge Road to Mansion House	—	—	—	—	—	—	(*g*)1	6 58	(*g*) Workmen are also booked by this train *from* Uxbridge Road and Addison Road for Cannon Street and stations to Whitechapel (Mile End) inclusive.
FROM EAST TO WEST:—									
Whitechapel (Mile End) to Hounslow Barracks.	—	—	—	—	—	—	2	33 60	
Mansion House to Hounslow Barracks.	—	—	—	—	1	15 3	—	—	
West Kensington to Hounslow Barracks.	—	—	—	—	(*h*)1	9 27	—	—	(*h*) Workmen are booked *to* Hounslow Line stations only by this train.
Hammersmith to Hounslow Barracks.	—	—	—	—	—	—	(*h*)1	8 39	
St. Marys to Richmond	—	—	—	—	—	—	(*j*)2	25 66	(*j*) Workmen are booked *to* Richmond *only* by these trains.
Mansion House to Richmond	—	—	—	—	(*j*)2	22 52	—	—	
Whitechapel (Mile End) to Hammersmith.†	—	—	—	—	1	8 33	1	8 33	
St. Mary's to Hammersmith†	—	—	—	—	1	8 13	1	8 13	
Mansion House to Hammersmith	—	—	1	6 46	—	—	1	6 46	
† Tickets are also issued to Richmond by these trains, an extra distance of	—	—	—	—	—	9 40	—	9 40	
Mansion House to Wimbledon	—	—	—	—	—	—	(*k*)1	10 49	(*k*) Workmen are booked *to* Wimbledon Line stations *only* by this train.
Earls Court to Wimbledon	—	—	—	—	1	5 39	1	5 39	
High Street (Kensington) to Putney Bridge.	—	—	—	—	1	2 63	1	2 63	
Earls Court to Putney Bridge	—	—	—	—	1	2 2	1	2 2	
Add miles transferred from above Inner Circle Section.	—	—	—	—	—	—	—	3 38	
Total Main Line	Nil	—	2	13 12	18	180 36	27	287 37	
GRAND TOTAL	1	5 15	5	28 57	(*l*)30	232 2	(*l*)39	344 21	(*l*) Includes miles run by Metropolitan District Company's trains over London and South-Western Line between junction (near Ravenscourt Park Station) and Richmond; and also between Putney Bridge Junction and Wimbledon; as well as miles run by London and North-Western trains between Uxbridge Road Station and Mansion House Station.

Note.—The Metropolitan District Railway Company is not required to run workmen's trains over the lines authorised by the Metropolitan and District Railways (City Lines and Extensions) Act, 1879, 42 & 43 Vict. c. 201, nor over any of their railways except one daily each way over the lines authorised by the Metropolitan District Railway Act, 1864, 27 & 28 Vict. c. 322.

No. 5.

NORTH LONDON RAILWAY.

Workmen's Trains.

The statutory obligations of this Company are laid down in the usual terms in the following Acts, viz.:— Statutory obligations.

I.—*The North London Railway* (*City Branch*) *Act*, 1861, 24 & 25 Vict. cap. 196.

Section 45 requires that *one* train shall run every morning from Kingsland Station to Liverpool Street and *one* every evening from Liverpool Street to Kingsland Station at such hours, not being later than seven in the morning or earlier than six in the evening, as may be most convenient for the labouring classes residing at or beyond Kingsland and having business in London at fares not exceeding 1*d.* per passenger for each journey.

II.—*The North London Railway Act*, 1867, 30 Vict. cap. 78.

Section 50 limits the compensation for injury to passengers travelling with cheap tickets to a sum not exceeding 100*l.*

Section 51 contains the usual provisions for enabling the Company to ascertain the rights of applicants for cheap tickets.

Section 52 provides for penalties for the abuse of tickets.

Note.—Kingsland and Liverpool Street Stations are now named Dalston Junction and Broad Street respectively.

The Company is running the following workmen's trains:—

1.	At 5.16	a.m.	from Poplar,	arriving at Broad Street at	5.41 a.m.
2.	„ 5.46	„	„	„	6.11 „
3.	„ 6.16	„	„	„	6.41 „
4.	„ 6.31	„	„	„	6.56 „
5.	„ 6.46	„	„	„	7.11 „
6.	„ 7.1	„	„	„	7.26 „
7.	„ 7.16	„	„	„	7.41 „
8.	„ 7.31	„	„	„	7.56 „
9.	„ 7.9	„	Bow,	„	7.29 „
10.	„ 7.15	„	„	„	7.34 „
11.	„ 7.25	„	„	„	7.44 „
12.	„ 7.28	„	„	„	7.48 „
13.	„ 7.38	„	„	„	7.59 „
14.	„ 7.40	„	„	„	8.1 „
15.	„ 6.24	„	Canonbury	„	6.36 „
16.	„ 5.29	„	Chalk Farm	„	5.51 „
17.	„ 5.59	„	„	„	6.21 „
18.	„ 6.29	„	„	„	6.51 „
19.	„ 6.44	„	„	„	7.6 „
20.	„ 6.59	„	„	„	7.21 „
21.	„ 7.14	„	„	„	7.36 „
22.	„ 7.29	„	„	„	7.51 „
23.	„ 5.30	„	from Broad Street,	arriving at Chalk Farm at	5.54 a.m.
24.	„ 6.0	„	„	„	6.24 „
25.	„ 6.30	„	„	„	6.54 „
26.	„ 6.45	„	„	„	7.9 „
27.	„ 7.0	„	„	„	7.24 „
28.	„ 7.15	„	„	„	7.39 „
29.	„ 7.30	„	„	„	7.54 „
30.	„ 6.5	„	„	Poplar	6.33 „
31.	„ 6.20	„	„	„	6.48 „
32.	„ 6.50	„	„	„	7.18 „
33.	„ 7.5	„	„	„	7.33 „
34.	„ 7.20	„	„	„	7.48 „
35.	„ 7.35	„	„	„	8.3 „

These trains stop at all intermediate stations.

Workmen are conveyed between all stations on the direct route and by changing at Dalston Junction can also travel between all stations, Hackney to Poplar inclusive and Mildmay Park to Chalk Farm inclusive.

The trains between Broad Street and Bow and Poplar connect at Dalston with the trains to and from Broad Street and Chalk Farm.

Tickets on the return journey are available every week day by any Chalk Farm, Bow Local or Poplar train after 12 noon.

The distances are as follows :—

Stations.	Broad Street.	Shoreditch.	Haggerston.	Dalston Junction.	Hackney.	Homerton.	Victoria Park.	Old Ford.	Bow.	South Bromley.	Poplar.	Mildmay Park.	Canonbury.	Highbury.	Barnsbury.	Maiden Lane.	Camden Town.	Chalk Farm.
	M. C.	M. C.	M. C.	M. C.	M. C	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
Broad Street	—																	
Shoreditch	0 57	—																
Haggerston	1 40	0 63	—															
Dalston Junction	2 0	1 23	0 40	—														
Hackney	2 67	2 10	1 27	0 67	—													
Homerton	3 38	2 61	1 78	1 38	0 51	—												
Victoria Park	4 7	3 30	2 47	2 7	1 20	0 49	—											
Old Ford	4 55	3 78	3 15	2 55	1 68	1 17	0 48	—										
Bow	5 16	4 39	3 56	3 16	2 29	1 58	1 9	0 41	—									
South Bromley	6 5	5 28	4 45	4 5	3 18	2 47	1 78	1 30	0 69	—								
Poplar	6 38	5 61	4 78	4 38	3 51	3 0	2 31	1 63	1 22	0 33	—							
Mildmay Park	2 40	1 63	1 0	0 40	1 27	1 78	2 47	3 15	3 56	4 45	4 78	—						
Canonbury	2 69	2 12	1 29	0 69	1 56	2 27	2 76	3 44	4 5	4 74	5 27	0 29	—					
Highbury	3 31	2 54	1 71	1 31	2 18	2 69	3 38	4 6	4 47	5 36	5 69	0 71	0 42	—				
Barnsbury	3 69	3 12	2 29	1 69	2 56	3 27	3 76	4 44	5 5	5 74	6 27	1 29	1 0	0 38	—			
Maiden Lane	4 30	3 53	2 70	2 30	3 17	3 68	4 37	5 5	5 46	6 35	6 68	1 70	1 41	0 79	0 41	—		
Camden Town	4 77	4 20	3 37	2 77	3 64	4 35	5 4	5 52	6 13	7 2	7 35	2 37	2 8	1 46	1 8	0 47	—	
Chalk Farm	5 51	4 74	4 11	3 51	4 38	5 9	5 58	6 26	6 67	7 56	8 9	3 11	2 62	2 20	1 62	1 21	0 54	—

Conditions cheap tickets are issued.

Daily return tickets only are now issued at an uniform charge of 2*d.* each, and can be obtained by personal application at any of the stations previously named. Tickets dated for use on the following day may be had by applying at the various booking offices after 4.0 p.m. and on Saturdays after 12 noon, it being understood that tickets issued in this way on Saturdays will be dated for use on the Monday following. These tickets are also issued to workwomen, the North London Company having for many years past treated both men and women on the same footing.

The applicant may be required to give his full christian and surname, address and trade, as well as the name and address of his employer, and to allow a reasonable time for ascertaining by inquiry whether the person so applying is an "artisan," "mechanic," or "daily labourer," as prescribed by the Act.

The tickets are available for the day of issue only, and for one journey only in each direction between any pair of stations by the advertised Workmen's Trains in third-class carriages only, and subject as regards luggage to the same regulations as other third-class passengers.

Prior to March 1894 weekly tickets only were issued.

The number of weekly tickets issued were :—

In October 1893	46,873
In November 1893	43,158

The total number of such tickets issued in 1893 was 474,543, estimated to represent 5,671,816 journeys.

The number of daily return tickets issued in March 1894 was 250,732, compared with 37,823 weekly tickets issued in March 1893, estimated to represent 220,515 daily return tickets.

The 35 trains before mentioned are made up as follows :—

No. of Trains.	Composite.	First.	Second.	Third.	Brakes.	Total Third Class Seating Capacity per Train.
15	2	2	3	3	2	180
14	1	1	3	6	2	300
3	—	3	4	3	2	150
1	1	4	3	2	2	100
1	1	1	3	8	2	400
1	—	—	—	13	2	650
						1,780

With the exception of the last two or three morning trains the accommodation provided is ample to meet the requirements of workmen. The overcrowding of these trains is due to the workmen deferring their journey until the last moment.

Some of the evening down trains are still occasionally overcrowded, owing to the trains at night being common to workmen and ordinary passengers.

When, owing to wet weather or one train being late, there is more pressure than usual, the workmen are allowed to get into second-class carriages.

An additional train of 13 third-class coaches, with 650 seats, has been added to the Bow and Broad Street service since the last return was published and other trains strengthened, with the result that it will now be observed that the third-class seating capacity of the workmen's morning trains has been more than doubled.

The workmen's trains are advertised by special posters as well as in the time-table books.

Workmen's tickets are issued daily from Broad Street and all intermediate stations to Camden Town inclusive, to Willesden (return fare 4*d.*) by the 5.30 a.m. from Broad Street, changing at Chalk Farm, arriving at Willesden 6.15 a.m., and are available to return by 5.17 p.m. from Willesden daily, and 12.32 p.m. on Saturdays, or any subsequent Willesden low-level train.

No. 5.

STATEMENT showing WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually running in the Years 1883, 1890, and 1894 respectively on the NORTH LONDON RAILWAY.

Portion of Company's Line.	Details of Trains							
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage
		M.		M.		M.		M.
Dalston to Broad Street*	1	2	5	10	—	—	—	—
Poplar to Broad Street	Nil.	Nil.	Nil.	Nil.	8	48	8	48
Bow to Broad Street	,,	,,	,,	,,	5	25	6	30
Canonbury to Broad Street*	,,	,,	,,	,,	1	3	1	3
Chalk Farm to Broad Street	,,	,,	,,	,,	7	42	7	42
Broad Street to Chalk Farm	,,	,,	,,	,,	7	42	7	42
Broad Street to Poplar	,,	,,	,,	,,	6	36	6	36
Total	1	2	5	10	34	196	35	201

* The services between Broad Street and Chalk Farm, Canonbury, Bow, and Poplar respectively serve the district between Broad Street and Dalston, and the trains running between Chalk Farm and Broad Street are also available for passengers travelling to and from Canonbury.

No. 6.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

WORKMEN'S TRAINS ON THE METROPOLITAN LINES.

SIR, 14th August 1894.

IN compliance with the request contained in your circular letter, I have the pleasure to forward you herewith a revised statement of the trains provided upon this railway for the accommodation of the working classes at the present time, from which it will be seen that since the Return prepared in 1890 the Company has increased the number of such trains from 36 to 43 daily, and their mileage from 278 miles 50 chains to 315 miles 16 chains.

Particulars will also be found appended of the fares now charged to persons travelling by these trains, compared with the fares in operation in 1890, showing that important reductions have been made at some 16 stations.

I would add that with a view to meeting the generally expressed wants of the working men a concession has been made in regard to the availability of tickets, which, under present arrangements, may be used for the return journey by any ordinary local train during the day of issue, instead of being limited to trains after 4 p.m., as formerly, the only exception being in respect to one train which runs over the West London Extension Railway, the tickets for which are available for the return journey after 5 p.m., or on Saturdays after 2 p.m. This railway is owned by three other companies besides the Brighton, and we cannot act independently.

A further concession has been made by allowing the holders of workmen's tickets from Croydon (South, New, and West), Norwood Junction, Selhurst, and Thornton Heath to London Bridge, to return, if so desired, from Victoria, under the same regulations as from London Bridge.

In addition the Company has, by way of experiment, since the 1st January last, issued tickets between Clapham Junction and Victoria in sets of six or under, to cover the journeys for a week, but, from the comparatively small number of applications which have been made for them, there would appear to be no general requirement for the issue of tickets in this manner.

Accompanying the statements above referred to will be found a summary of the workmen's trains running in 1894 and their mileage, compared with the like particulars in 1883 and 1890 respectively, as requested.

I am, &c.
(Signed) A. Sarle,
Secretary and General Manager.

To the Assistant Secretary,
Railway Department, Board of Trade,
London, S.W.

Statutory obligations.

This Company is under no statutory obligations to run workmen's trains, except as one of the lessees and the working company of the East London Railway.

The obligations of this Company are laid down in the usual terms in the following Act, viz.:—

The East London Railway Act, 1865, 28 Vict. cap. 51.

Section 144 requires that *one* train shall be run every morning from New Cross to Liverpool Street, and *one* every evening from Liverpool Street to New Cross, at such hours, not being later than seven in the morning or earlier than six in the evening, as may be most convenient for artizans, &c., at fares not exceeding one penny per passenger for each journey, and stopping at all the intermediate stations.

Section 145 contains the usual provisions for enabling the Company to ascertain the rights of applicants for cheap tickets.

Section 146 provides for penalties for the abuse of tickets.

Section 147 limits the compensation for injury to passengers travelling with cheap tickets to a sum not exceeding one hundred pounds.

On the South London, Peckham, and Sutton Lines.

Details of trains.

1. At 4.46 a.m. from Battersea Park, arriving at London Bridge at 5.14 a.m.
2. At 5 a.m. from Victoria „ „ 5.34 a.m.
3. At 5.25 a.m. „ „ „ 5.59 a.m.
4. At 6 a.m. from Streatham „ „ 6.25 a.m.
5. At 5.55 a.m. from Victoria „ „ 6.29 a.m.
6. At 6.30 a.m. from Peckham Rye „ „ 6.42 a.m.
7. At 6.30 a.m. from Victoria „ „ 7.4 a.m.
8. From Peckham Rye 7.1 a.m., Queen's Road 7.4 a.m., to London Bridge, arriving at 7.14 a.m.—not to intermediate stations.

On the South London, Peckham, and Sutton Lines.

1. At 5 a.m. from London Bridge, arriving at Victoria at 5.36 a.m.
*2. At 5.20 a.m. „ „ Streatham at 5.47 a.m.
3. At 5.47 a.m. „ „ Victoria at 6.23 a.m.
4. At 5.55 a.m. „ „ Streatham at 6.22 a.m.
5. At 6.15 a.m. „ „ Victoria at 6.51 a.m.

(All these trains stop at all intermediate stations.)

6. From Queen's Road at 6.45 a.m., Peckham Rye 6.48 a.m., to Victoria, arriving at 7.11 a.m.—not to intermediate stations.

7. From Queen's Road 7.5 a.m., Peckham Rye 7.8 a.m. to Victoria, arriving at 7.31 a.m.—not to intermediate stations.

On the East London Line, including Old Kent Road, Queen's Road, and Peckham Rye (Down).

1. At 5.5 a.m. from Liverpool Street, arriving at New Cross 5.24. a.m. (worked by Great Eastern Company).
2. At 5.22 a.m. from Shoreditch, arriving at Peckham Rye 5.42 a.m. (worked by Brighton Company).
3. At 5.40 a.m. from Shoreditch, arriving at New Cross 5.56 a.m. (worked by Brighton Company).
4. At 5.58 a.m. from Liverpool Street, arriving at New Cross 6.17 a.m. (worked by Great Eastern Company).
5. At 6.20 a.m. from Shoreditch, arriving at Peckham Rye 6.40 a.m. (worked by Brighton Company).
6. At 6.54 a.m. from Shoreditch, arriving at New Cross 7.10 a.m. (worked by Brighton Company).

All these trains stop at all intermediate stations, but the Peckham Rye trains do not pass New Cross.

East London Line (Up).

1. At 4.49 a.m. from New Cross, arriving at Shoreditch at 5.5 a.m. (worked by Brighton Company).
2. At 5.15 a.m. from New Cross, arriving at Shoreditch at 5.31 a.m. (worked by Brighton Company).
3. At 5.30 a.m. from New Cross, arriving at Liverpool Street 5.50 a.m. (worked by Great Eastern Company).
4. At 5.53 a.m. from Peckham Rye, arriving at Shoreditch 6.14 a.m. (worked by Brighton Company).
5. At 6.13 a.m. from New Cross, arriving at Shoreditch 6.29 a.m. (worked by Brighton Company).
6. At 6.55 a.m. from Peckham Rye, arriving at Shoreditch 7.16 a.m. (worked by Brighton Company).

All these trains stop at all intermediate stations, but the Peckham Rye trains do not pass New Cross.

On the Croydon Line (Down).

1. At 5 a.m. from London Bridge, arriving at South Croydon 5.40 a.m.
2. At 5.33 a.m. from London Bridge to West Croydon, arriving 6.9 a.m.

These trains stop at all intermediate stations.

On the Croydon Line (Up).

1. At 5 a.m. from West Croydon, arriving at London Bridge 5.33 a.m.
2. At 5.50 a.m. from South Croydon, arriving at London Bridge 6.28 a.m.
3. At 6.38 a.m. from South Croydon, arriving at London Bridge 7.16 a.m.
4. At 6.54 a.m. from West Croydon, arriving at London Bridge 7.28 a.m.

These trains stop at all intermediate stations but No. 4, which calls at Sydenham Forest Hill, Honor Oak Park, Brockley, and New Cross to put down workmen only.

The West Croydon trains do not pass New Croydon.

On the Balham Line.

1. At 5.35 a.m. from Victoria, arriving at London Bridge at 6.41 a.m. This train runs viâ Clapham Junction, Balham, and Norwood Junction, and stops at all the 17 intermediate stations.

2. At 5.5 a.m. from West Croydon viâ Balham line, arriving at Victoria 5.45 a.m. This train calls at all stations, namely, Selhurst, Thornton Heath, Norbury, Streatham Common, Balham, Wandsworth Common, Clapham Junction, Battersea Park, and Grosvenor Road.

3. At 5.28 a.m. from Clapham Junction to the Crystal Palace, viâ Balham line. This train calls at the following stations, viz., Streatham Common, Norbury, Thornton Heath, Selhurst, and Norwood Junction, arriving at the Crystal Palace at 5.56 a.m.

4. At 5.35 a.m from Streatham Common to Victoria, viâ Crystal Palace, arriving at Victoria at 6.30 a.m. This train, which formerly started from Norbury at 5.38 a.m., calls at all stations, namely, Norbury, Thornton Heath, Selhurst, Norwood Junction, Crystal Palace, Gipsy Hill, West Norwood, Streatham Hill, Balham, Wandsworth Common, Clapham Junction, Battersea Park, and Grosvenor Road.

West End Line (to Victoria).

1. At 5.5 a.m. Crystal Palace to Victoria, arriving at 5.40 a.m.

2. *At 6.54 a.m. from Streatham Hill, arriving at Victoria 7.15 a.m.

3. At 6.20 a m. from London Bridge to Victoria viâ Crystal Palace, arriving at Victoria at 7.20 a.m.

These trains stop at all intermediate stations.

West End Line (from Victoria).

1. At 6.0 a.m. Victoria to Streatham Hill, arriving at 6.21 a.m.

2. At 6.20 a.m. from Victoria to London Bridge viâ Crystal Palace, arriving at London Bridge at 7.21 a.m.

This train stops at all intermediate stations.

Workmen's tickets were formerly issued from Sydenham and stations thence to London Bridge by this train.

The workmen's tickets by the whole of the above trains are available for the return journey by any third-class train (except main line trains) on the day of issue only.

West London Extension Line.

1. At 5.43 a.m. from Clapham Junction, arriving at Kensington at 5.54 a.m.

This train calls at Battersea and West Brompton only, and is worked by the London and South Western Company.

The workmen's tickets issued by this train are available for the return journey by any third-class train after 5 p.m., except Saturdays, when they are available after 12 noon.

The fares and distances on the above lines are as follows :—

South London Line.

Stations.	Distance.	Fares (Return), 1890 and 1894.	
		From Victoria.	From London Bridge.
	M. C.	*d.*	*d.*
Victoria	—	—	4
Grosvenor Road	0 64	—	4
Battersea Park	1 24	—	4
Wandsworth Road	1 78	2	4
Clapham Road	2 29	2	4
East Brixton	3 43	3	3
Denmark Hill	4 28	4	3
Peckham Rye	5 16	4	3
Queen's Road	5 73	4	3
Old Kent Road	6 13	4	3
South Bermondsey	7 7	4	2
London Bridge	8 51	4	—

South London, Peckham, and Sutton Lines.

Stations.	Distance.	Fares (Return), 1890 and 1894.	
		From Victoria.	From London Bridge.
	M. C.	*d.*	*d.*
London Bridge	—		
South Bermondsey	1 44	Same as above.	
Old Kent Road	2 38		
Queen's Road	2 58		
Peckham Rye	3 35		
East Dulwich	4 22	—	4
North Dulwich	4 65	—	4
Tulse Hill	6 8	—	4
Streatham	7 51	—	4
Denmark Hill	4 23		
East Brixton	5 8		
Clapham Road	6 22		
Wandsworth Road	6 53	Same as above.	
Battersea Park	7 27		
Grosvenor Road	7 67		
Victoria	8 51		

East London Line.

Stations.	Distance from Shoreditch.	Return Fares, 1890 and 1894.	
		Peckham Rye.	New Cross.
	M. C.	*d.*	*d.*
Shoreditch	—	6	4
Whitechapel	0 37	6	4
Shadwell	1 6	4	3
Wapping	1 46	4	3
Rotherhithe	1 72	4	2
Deptford Road	2 35	—	—
New Cross	3 60	—	—
Old Kent Road	3 52	—	—
Queen's Road	3 72	—	—
Peckham Rye	4 49	—	—

Croydon Line.

Stations.	Distance.	Return Fares, 1890.	Return Fares, 1894.
	M. C.	*d.*	*d.*
London Bridge	—	—	—
New Cross	2 63	4	4
Brockley	3 43	4	4
Honor Oak Park	4 51	—	4
Forest Hill	5 41	4	4
Sydenham	6 30	4	4
Penge	7 6	4	4
Anerley	7 37	4	4
Norwood Junction	8 46	4	4
New Croydon	10 23	6	5
West Croydon	10 25	6	5

Victoria to London Bridge viá Balham.

Stations.	Distance.	Return Fares, 1890.		Return Fares, 1894.	
		Victoria.	London Bridge.	Victoria.	London Bridge.
	M. C.	*d.*	*d.*	*d.*	*d.*
Victoria	—	—	4	—	4
Grosvenor Road	0 64	—	4	—	4
Battersea Park	1 24	—	4	—	4
Clapham Junction	2 58	2	6	2	4
Wandsworth Common	4 7	3	6	3	4
Balham	4 55	4	6	4	4
Streatham Common	6 51	4	6	4	4
Norbury	7 35	4	6	4	4
Thornton Heath	8 57	4	5	4	4
Selhurst	9 34	5	4	4	4
Norwood Junction	10 41	5	4	4	4
Anerley	11 50	6	4	4	4
Penge	12 1	6	4	4	4
Sydenham	12 57	6	4	4	4
Forest Hill	13 46	6	4	4	4
Honor Oak Park	14 36	—	—	4	4
Brockley	15 39	6	4	4	4
New Cross	16 24	6	4	4	4
London Bridge	19 10	4	—	4	—

Number of Trains.	1st Class.	2nd Class.	3rd Class.	Composite.	3rd Class Brakes.	Number of 3rd Class Seats.
			West End Line to Victoria.			
1	3	2	3	1	2	210
2	3	2	3	1	2	210
3	3	2	4	1	2	260
			West End Line from Victoria.			
1	3	2	2	1	2	160
2	3	2	5	1	2	310
			West London Extension Line.			
1	—	—	3	2	2	210

The Company ran workmen's trains upon their system many years before any statutory obligations came into operation, and long before the passing of the Cheap Trains Act, 1883. Remarks.

The conditions under which these special cheap return tickets for the working classes are issued are as follows :—

They are only available for the first journey by certain specified trains, as shown in the various time tables and bills issued by the Company, but the return journey may be made by any third-class train the same day.

Passengers travelling in a workman's train without tickets, or the holder of a working class ticket travelling by any but authorised working class trains, are charged the full ordinary fare from the station whence the train started, and are liable to the Company's byelaws.

Holders of the cheap working class tickets travelling in first or second class carriages are charged full first or second class fares, as the case may be.

The cheap workmen's tickets are available in third-class carriages only, and are practically issued by the workmen's trains to any person, male or female, who may apply for them; and there is no doubt that in this respect a very large number of these cheap tickets are issued to persons for whom, in the first instance, they were never intended, and who do not by any means come within the category of the *bonâ fide* working classes.

During the months of November and December 1893, the Company issued 668,618 return tickets, the total issue for the year 1893 being 4,290,230 (return tickets numbers doubled), a very large increase compared with the issue for the year 1882, 1,164,928 (return tickets also numbers doubled), particularly when it is taken into account that the returns for the year 1882 included workmen's bookings from the East London Line stations, then worked exclusively by the Brighton Company, and which bookings comprised about one-fourth of the total issue, whereas in the returns for the year 1893 none of the bookings from the East London Line stations are included, the East London Line now being worked by a Joint Committee.

Very few (if any) complaints have been received by the Company with regard to the workmen's traffic. This arises probably in a great measure from the traffic being exclusively third-class; whereas the larger proportion of the Brighton Company's daily suburban traffic, in the metropolitan area, being composed of first and second class season ticket traffic, it is consequently separated from the workmen's traffic by the distinction of classes.

Considerable additions in the number of trains and various other facilities, such as the reduction of the fares, have been conceded to the working classes since Major Marindin's Report in the year 1883.

The whole of the workmen's trains are largely advertised by means of special bills, as well as in the public time table books of the Company, and such trains are also specially noted and distinguished on the ordinary time bill sheets posted up at the Company's stations.

The workmen's tickets are available at intermediate stations between those to and from which issued, but they are not available beyond the stations named thereon, and if used in contravention of this rule the ticket will be ignored and the full fare charged from the starting point of the train. These tickets are issued at a reduced rate on the condition that the liability of the Company to make compensation for injury, or otherwise, in respect of the passengers shall be limited to a sum not exceeding one hundred pounds, the amount to be determined by an arbitrator to be appointed by the Board of Trade. Conditions under which tickets are issued.

The tickets are available in third-class carriages only, and are issued to any person who may apply for them. The luggage is limited to hand luggage.

Make-up of trains.

The following is the make-up of the trains used for workmen :—

Number of Trains.	1st Class.	2nd Class.	3rd Class.	Composite.	3rd Class Brakes.	Number of 3rd Class Seats.
			On the South London, Peckham, and Sutton Lines. Up.			
1	3	2	4	1	2	260
2	3	2	3	1	2	210
3	3	2	3	1	2	210
4	3	2	4	1	2	260
5	3	2	4	1	2	260
6	3	2	2	1	2	160
7	3	2	3	1	2	210
8	3	2	4	1	2	260
			On the South London, Peckham, and Sutton Lines. Down.			
1	3	2	3	1	2	210
2	3	2	4	1	2	260
3	3	2	3	1	2	210
4	—	—	2	3	1 and 1 brake van.	130
5	3	2	3	1	2	210
6	3	2	4	1	2	260
7	3	2	2	1	2	160
			East London Line. Down.			
1	—	—	—	—	—	160
2	1	1	2	—	2	160
3	1	1	2	—	2	160
4	—	—	—	—	—	160
5	1	1	2	—	2	160
6	1	1	2	—	2	160
			East London Line. Up.			
1	1	1	2	—	2	160
2	1	1	2	—	2	160
3	—	—	—	—	—	160
4	1	1	2	—	2	160
5	1	1	2	—	2	160
6	1	1	2	—	2	160
			Croyaon Line. Down.			
1	3	2	6	1	2	360
2	—	—	10	3	2	560
			Croydon Line. Up.			
1	3	2	6	1	2	360
2	3	2	6	1	2	360
3	3	2	3	1	3	240
4	—	—	10	3	2	560
			Balham Line.			
1	3	2	4	1	2	260
2	3	2	6	1	2	360
3	3	2	5	1	2	310
4	3	2	5	1	2	310

No. 6.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually running in the years 1883, 1890, and 1894 respectively on the LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

Portion of Company's Line.	Details of Trains— Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.
		M. C.		M. C.		M. C.		M. C.
South London :—								
Down	—	—	3	72 78	5	82 77	5	86 40
Up	—	—	6		6		7	
South London and Sutton, &c. :—								
Down	—	—	1	7 49	1	15 18	2	22 73
Up	—	—	—		1		1	
South London and *East London :—								
Down	—	—	8	79 60	4	37 50	6	37 16
Up	*1	4 40	9		5		6	
Croydon Line :—								
Down	—	—	1	38 22	2	70 64	2	64 67
Up	—	—	3		5		4	
West End and Balham Lines :—								
Down	—	—	—	—	1	15 28		
Up	—	—	—	—	1			
West End Line	—	—	—	—	2	17 74		
Victoria and London Bridge, viâ Norwood Junction :—								
Over Balham Line	—	—	1 train	4 51	1 train	4 51	9	100 26
Over Croydon Line				8 53		8 53		
Over West End Line				5 67		5 67		
London Bridge and Victoria (viâ the Crystal Palace) :—								
Over Croydon Line	—	—	—	—	1 train	7 41		
Over West End Line						8 54		
West London Extension Line :—								
Up	—	—	—	—	1	3 33	1	3 34
Total	1	4 40	32	217 60	36	278 50	43	315 16

* Mileage of East London Trains now worked by Great Eastern Company not included.

No. 7.

GREAT NORTHERN RAILWAY COMPANY.

The Great Northern Company are not under any statutory obligations under the provisions of their special Acts to run workmen's trains, but the arrangements of this Company for the accommodation of workmen are as follows :— No statuto obligations

STATEMENT A.—Showing CHEAP FARE WORKMEN'S TRAINS, April 1894.

Stations.									
	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.
New Barnet dep.	—	4 55	—	—	5 16	—	5 45	—	—
Oakleigh Park „	—	4 57	—	—	5 18	—	5 47	—	—
New Southgate „	—	5 3	—	—	5 23	—	5 52	—	—
Enfield „	4 45	—	—	—	—	—	—	5 49	—
Winchmore Hill „	4 49	—	—	—	—	—	—	5 53	—
Palmer's Green „	4 52	—	—	—	—	—	—	5 50	—
Bowes Park „	4 55	—	—	5 20	—	—	—	5 58	—
Wood Green „	4 58	5 7	—	5 23	5 27	—	5 56	6 1	—
Hornsey „	5 1	5 10	—	5 26	5 31	—	5 59	6 4	—

Stations.		A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.
Harringay	dep.	5 4	5 13	—	5 29	5 34	—	6 2	6 7	—
High Barnet	„	—	—	4 57	—	—	—	—	—	5 50
Totteridge	„	—	—	5 1	—	—	—	—	—	5 54
Woodside Park	„	—	—	5 4	—	—	—	—	—	5 57
Finchley	„	—	—	5 8	—	—	—	—	—	6 1
East Finchley	„	—	—	5 13	—	—	—	—	—	6 6
Highgate	„	—	—	5 17	—	—	—	—	—	6 10
Crouch End	„	—	—	5 20	—	—	—	—	—	6 13
Stroud Green	„	—	—	5 22	—	—	—	—	—	6 15
Finsbury Park	„	5 7	5 17	5 25	5 33	5 37	6 0	6 5	6 10	6 19
Holloway	„	5 12	5 22	5 30	5 38	5 42	6 5	6 10	6 15	6 25
King's Cross (Term.)	arr.	—	—	—	5 42	—	6 10	6 15	—	—
Do. (Met.)	„	5 22	5 31	5 40	—	5 53	—	—	6 24	6 33
Farringdon Street	„	5 26	5 35	5 44	—	5 57	—	—	6 28	6 37
Aldersgate „	„	5 28	5 37	5 46	—	5 59	—	—	6 30	6 39
Moorgate „	„	5 30	5 39	5 48	—	6 1	—	—	6 32	6 41

In 1883 there were 3 workmen's trains run.
In 1890 „ „ 6 „ „
In 1894 „ are 9 „ „

These trains are advertised as workmen's trains in the Company's public time book.

In addition to the above, the Company carry between London and all stations in their suburban districts, in both directions, third-class passengers at a single fare for the return journey, provided the trains by which they travel are appointed to reach their destination before 8 o'clock in the morning. A table of the trains by which half fare tickets are available is given below :—

STATEMENT B, showing HALF FARE WORKMEN'S TRAINS, April 1894.

Stations.		A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.
New Barnet	dep.	—	6 10	—	—	7 2	—	—	7 20	—	—
Oakleigh Park	„	—	6 12	—	—	7 4	—	—	7 23	—	—
New Southgate	„	—	6 17	—	—	7 9	—	—	7 28	—	—
Enfield	„	—	—	—	6 51	—	—	—	—	7 24	—
Winchmore Hill	„	—	—	—	6 55	—	—	—	—	7 28	—
Palmer's Green	„	—	—	—	6 58	—	—	—	—	7 31	—
Bowes Park	„	—	—	—	7 0	—	—	—	—	7 33	—
Wood Green	„	6 15	6 21	—	7 3	7 13	—	7 28	7 32	7 36	7 50
Hornsey	„	6 18	6 24	—	7 6	7 16	—	7 31	7 36	7 39	7 53
Harringay	„	6 21	6 27	—	7 9	7 19	—	7 34	7 40	7 42	7 56
High Barnet	„	—	—	6 40	—	—	7 5	—	—	—	—
Totteridge	„	—	—	6 44	—	—	7 9	—	—	—	—
Woodside Park	„	—	—	6 47	—	—	7 12	—	—	—	—
Finchley	„	—	—	6 51	—	—	7 16	—	—	—	—
East Finchley	„	—	—	6 55	—	—	7 20	—	—	—	—
Highgate	„	—	—	6 59	—	—	7 24	—	—	—	—
Crouch End	„	—	—	7 2	—	—	7 27	—	—	—	—
Stroud Green	„	—	—	7 4	—	—	7 29	—	—	—	—
Finsbury Park	„	6 24	6 31	7 7	7 12	7 23	7 33	7 37	7 45	7 46	7 59
Holloway	„	6 30	6 36	7 12	7 18	7 28	7 38	7 42	7 50	7 49	—
York Road	arr.	—	6 43	7 17	7 25	7 34	7 45	—	7 57	—	—
King's Cross (Term.)	„	6 35	—	—	—	—	—	7 46	—	7 53	—
Do. (Met.)	„	—	6 46	7 20	7 28	7 37	7 48	—	8 0	—	—
Farringdon Street	„	—	6 50	7 24	7 32	7 41	7 52	—	—	—	—
Aldersgate Street	„	—	6 52	7 26	—	—	7 54	—	—	—	—
Moorgate Street	„	—	6 54	7 28	—	—	7 56	—	—	—	—

In 1883 there were 2 half fare trains run.
„ 1890 „ 6 „ „
„ 1894 „ 10 „ „

It is submitted, therefore, that all classes of workmen are fully provided for on the Great Northern. Those having to commence their work at 6 o'clock in the morning are carried by the earlier workmen's trains at specially low fares. Other workmen, warehousemen, clerks, &c., whose business commences at or soon after 8 o'clock, are carried at a single fare for the double journey.

The nine special workmen's trains enumerated above provide accommodation daily for about 4,000 third-class passengers, which is amply sufficient, and there is no complaint of overcrowding.

Lists of the fares charged by the special workmen's trains and by the ordinary trains arriving before 8 o'clock in the morning are printed hereunder.

WORKMEN'S FARES, Third Class Return, in operation between—

Station.	KING'S CROSS.		MOORGATE STREET.		ALDERSGATE STREET.		FARRINGDON STREET.	
	A.	B.	A.	B.	A.	B.	A.	B.
	King's Cross by Special Early Workmen's Trains. *	*Both Ways.* Arriving at Destination at or before 8 a.m.	Moorgate Street by Special Early Workmen's Trains.	*Both Ways.* Arriving at Destination at or before 8 a.m.	Aldersgate Street by Special Early Workmen's Trains.	*Both Ways.* Arriving at Destination at or before 8 a.m.	Farringdon Street by Special Early Workmen's Trains.	*Both Ways.* Arriving at Destination at or before 8 a.m.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
Holloway and	2	—	3	4	3	4	3	4
Finsbury Park	2	4	3	4	3	4	3	4
Stroud Green	3	4	3½	4	3½	4	3½	4
Crouch End	3	4	3½	4½	3½	4½	3½	4½
Highgate	3	4½	3½	6	3½	6	3½	5½
Muswell Hill	—	5	—	6	—	6	—	6
East Finchley	4	5½	4½	7	4½	7	4½	7
Finchley (Church End)	4	7	5	9	5	8½	5	8½
Woodside Park, for North Finchley.	4	8½	5	10	5	10	5	9½
Totteridge	5	9	6	11	6	10½	6	10
High Barnet	5	9	6	11	6	10½	6	10
Harringay	3	4	3½	4	3½	4	3½	4
Hornsey	3	4	3½	5	3½	5	3½	5
Wood Green	3	5	3½	6	3½	6	3½	6
Bowes Park	3½	5½	4	6	4	6	4	6
Palmers Green	4	6	4½	7	4½	7	4½	7
Winchmore Hill	4	7½	4½	8½	4½	8½	4½	8½
Enfield	4	9	4½	11	4½	10½	4½	10
New Southgate	4	6	5	8	5	7½	5	7½
Oakleigh Park	5	8	6	10	6	9½	6	9½
New Barnet	5	9	6	11	6	10½	6	10
Hadley Wood	—	10½	—	1/0½	—	1/0	—	11½

* Fares in Column A. are only in operation to King's Cross, &c.

The fares in the columns marked A. are applicable to the nine trains shown in statement A. from suburban stations to London. The fares in the columns marked B. apply to trains from the suburbs to London shown in statement B., and also to trains from London stations to the suburbs, reaching their destination, in either direction, before 8 o'clock in the morning.

THIRD CLASS RETURN TICKETS at a single fare, available to the Public generally, in operation between—

Station.	HOLLOWAY.	FINSBURY PARK.
	Both Ways. Arriving at Destination at or before 8 a.m.	*Both Ways.* Arriving at Destination at or before 8 a.m.
	d.	*d.*
Highgate and	4	—
Muswell Hill	4	4
East Finchley	4	4
Finchley (Church End)	5½	4½
Woodside Park, for North Finchley	6½	5½
Totteridge	7½	6½
High Barnet	7½	6½
Hornsey	4	—
Wood Green	4	4
Bowes Park	4	4
Palmers Green	4½	4
Winchmore Hill	6	5
Enfield	7	6½
New Southgate	4½	4
Oakleigh Park	6½	5½
New Barnet	7½	6½
Hadley Wood	9	8

Third-class return tickets at a single fare for the double journey are issued as below, viz.:—

From any station in list No. 1 to any station in list No. 2.
From any station in list No. 2 to any station in list No. 1.

List No. 1.

Moorgate Street.	Farringdon Street.	Holloway.
Aldersgate Street.	King's Cross.	Finsbury Park.

List No. 2.

Hadley Wood.	Palmers Green.	Finchley (Church End).
New Barnet.	Bowes Park.	East Finchley.
Oakleigh Park.	Hornsey.	Highgate.
New Southgate.	Harringay.	Muswell Hill.
Wood Green.	High Barnet.	Crouch End.
Enfield.	Totteridge.	Stroud Green.
Winchmore Hill.	Woodside Park.	

Also

From
Holloway
Finsbury Park } to Farringdon Street, Aldersgate Street, and Moorgate Street.

Farringdon Street
Aldersgate Street
Moorgate Street } to Holloway and Finsbury Park.

King's Cross to Finsbury Park.
Finsbury Park to King's Cross.

The following conditions apply to the issue of workmen's tickets:—

The tickets are issued on week days, and are available only on day of issue.

The return journey must be made on day of issue by any third-class train other than the trains specially excepted, and so marked in the time books as not being available.

The ordinary third-class single fare is charged in the case of tickets issued at a single fare for the double journey up to 8 o'clock in the morning.

No ticket is issued at a less price than 4*d*.

The tickets are issued at the reduced fares subject to the Company's byelaws, public notices, and General Regulations, and on the express condition that the holder of any workman's ticket shall not be entitled, under any circumstances, to claim compensation to a greater amount than 100*l*.

Workmen's tickets are not available on the North London Railway.

HENRY OAKLEY,
General Manager.

King's Cross Station,
April, 1890.

No. 7.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT OF PARLIAMENT, and also those actually running, in the Years 1883 1890 and 1894 respectively, on the GREAT NORTHERN RAILWAY.

Portion of Company's Line.	Details of Trains.							
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.	
	No.	Mileage.	No.	Mileage daily.	No.	Mileage.	No.	Mileage.
				M. C.		M. C.		M. C.
Palmer's Green to Morgate	—	—	1	8 44	—	—	—	—
Barnet (Main Line) to Moorgate	—	—	1	11 8	—	—	—	—
High Barnet to Moorgate	—	—	1	13 6	—	—	—	—
Enfield to Moorgate	—	—	—	—	2	22 12	2	22 12
New Barnet to Moorgate	—	—	—	—	2	22 16	2	22 16
High Barnet to Moorgate	—	—	—	—	1	13 6	2	26 12
New Barnet to King's Cross	—	—	—	—	1	9 17	1	9 17
Bowes Park to King's Cross	—	—	—	—	—	—	1	5 60
Finsbury Park to King's Cross	—	—	—	—	—	—	1	2 43
Total	—	—	3	32 58	6	66 51	9	88 0

No. 8.

GREAT WESTERN RAILWAY.

There is nothing in the Company's Acts requiring them to put on trains for the conveyance of workmen, but on and from the 1st June 1893 a train has been run from their main line at the following times:—

		A.M.
Southall	dep.	5 0
Hanwell	„	5 4
Castle Hill	„	5 7
Ealing	„	5 10
Acton	„	5 14
Westbourne Park	„	5 22
Royal Oak	„	5 24
Bishop's Road	arr.	5 26
*Do.	dep.	5 30
Moorgate Street	„	5 50
Aldgate	„	5 54

Workmen's trains are also run by the Great Western Company between Addison Road and Aldgate, and by the Great Western and Metropolitan Companies jointly from and to Hammersmith to and from Aldgate and Whitechapel.

The following are the times of the trains at present running for the conveyance of workmen between the stations named, and in the case of the trains from and to Hammersmith those marked with a cross are worked by the Great Western Company and the remainder by the Metropolitan Company:—

		A.M.	A.M.	A.M.
Addison Road	dep.	5 45	6 0	6 29
Aldgate	arr.	6 25	6 40	7 10
Aldgate	dep.	6 33	—	—
Addison Road	arr.	7 16	—	—

		× A.M.	A.M.	× A.M.	A.M.	× A.M.	A.M.
Hammersmith	dep.	5 15	5 35	5 53	6 8	6 14	6 34
Aldgate	arr.	5 54	6 15	6 32	6 47	6 53	7 15
Whitechapel (St. Mary's)	„	—	6 17	—	6 49	—	7 17

		A.M.	A.M.	A.M.
Whitechapel (St. Mary's)	dep.	—	—	6 6
Aldgate	arr.	5 29	5 49	6 8
Hammersmith	„	6 8	6 28	6 48

The tickets are available for return by any train after 12 noon.

The trains run by the Great Western Company convey first, second, and third-class passengers, and the carrying capacity is as shown below:—

——	First.	Second.	Third.	Total No. of Seats.
Hammersmith trains	60	158	236	454
Addison Road „	80	120	180	380
Southall „	6	8	270	284

* Great Western train does not run beyond Bishop's Road, where passengers change for stations on Metropolitan line.

The number of workmen's tickets issued from Great Western main line stations (Southall to Acton inclusive) from the 1st June 1893 to 30th April 1894, a period of 11 months, amounted to 31,357, an average of 110 per day; and at Addison Road and Uxbridge Road the number issued during the year 1893 was 9,663, an average of 31 per day.

A list is attached showing the distances and fares between all stations affected.

	Hammersmith.		Shepherd's Bush.		Latimer Road.		Notting Hill.		Westbourne Park.		Royal Oak.		Bishop's Road.		Edgware Road.		Baker Street.		Portland Road.		Gower Street.	
	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare
	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.
Southall -	10 18	6	9 40	6	8 58	6	8 23	6	7 64	4½	8 38	4½	8 70	4½	9 35	6	9 75	6	10 40	6	10 71	6
Hanwell -	8 40	6	7 62	6	7 0	6	6 45	6	6 6	4	6 60	4	7 12	4	7 57	6	8 17	6	8 62	6	9 13	6
Castle Hill -	7 54	5	6 76	5	6 14	5	5 59	5	5 20	3½	5 74	3½	6 26	3½	6 71	5½	7 31	5½	7 76	5½	8 27	5½
Ealing -	6 70	5	6 12	5	5 0	5	4 75	5	4 36	3	5 10	3	5 42	3	6 7	5	6 47	5	7 12	5	7 43	5
Acton -	5 31	4	4 53	4	3 71	4	3 36	4	2 77	2	3 51	2	4 3	2	4 48	4	5 8	4	5 53	4	6 4	4

	King's Cross.		Farringdon Street.		Aldersgate Street.		Moorgate Street.		Bishopsgate.		Aldgate.		Aldgate, East.		St. Mary's, Whitechapel.		Mark Lane.		Monument.		Cannon Street.	
	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.
	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.
Southall -	11 50	6	12 49	6	12 74	6	13 27	6	13 54	6	14 3	6	14 11	7	14 44	7	14 39	7	14 64	7	15 0	7
Hanwell -	9 72	6	10 71	6	11 16	6	11 49	6	11 76	6	12 25	6	12 33	7	12 66	7	12 61	7	13 6	7	13 22	7
Castle Hill -	9 6	5½	10 5	5½	10 30	5½	10 63	5½	11 10	5½	11 39	5½	11 47	6½	12 0	6½	11 75	6½	12 20	6½	12 36	6½
Ealing -	8 22	5	9 21	5	9 46	5	9 79	5	10 26	5	10 55	5	10 63	6	11 16	6	11 11	6	11 36	6	11 52	6
Acton -	6 63	4	7 62	4	8 7	4	8 40	4	8 67	4	9 16	4	9 24	5	9 57	5	9 52	5	9 77	5	10 13	5

	Shepherd's Bush.		Latimer Road.		Notting Hill.		Westbourne Park.		Royal Oak.		Bishop's Road.		Edgware Road.		Baker Street.		Portland Road.	
	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.
	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.
Addison Road	—	—	1 13	2	1 48	2	2 7	2	2 56	2	3 8	2	3 53	2	4 13	3	4 58	3
Uxbridge Road	—	—	0 46	2	1 1	2	1 40	2	2 9	2	2 41	2	3 6	2	3 46	2	4 11	3
Hammersmith	0 58	2	1 40	2	1 75	2	2 34	2	3 3	2	3 35	2	4 0	2	4 40	3	5 5	3
Shepherd's Bush -			0 62	2	1 17	2	1 56	2	2 25	2	2 57	2	3 22	2	3 62	2	4 27	3
Latimer Road -					0 35	2	0 74	2	1 43	2	1 75	2	2 40	2	3 0	2	3 45	2
Notting Hill -							0 39	2	1 8	2	1 40	2	2 5	2	2 45	2	3 10	2
Westbourne Park -									0 49	2	1 1	2	1 46	2	2 6	2	2 51	2
Royal Oak -											0 32	2	0 77	2	1 37	2	2 2	2

	Gower Street.		King's Cross.		Farringdon Street.		Aldersgate Street.		Moorgate Street.		Bishopsgate.		Aldgate.		Aldgate, East.		St. Mary's, Whitechapel.	
	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.
	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.
Addison Road	5 9	3	5 68	3	6 67	3	7 12	4	7 45	4	7 72	4	8 21	4	8 29	4	8 62	4
Uxbridge Road	4 42	3	5 21	3	6 20	3	6 45	3	6 78	4	7 25	4	7 54	4	7 62	4	8 15	4
Hammersmith	5 36	3	6 15	3	7 14	4	7 39	4	7 72	4	8 19	4	8 48	4	8 56	4	9 9	4
Shepherd's Bush	4 58	3	5 37	3	6 36	3	6 61	3	7 14	4	7 41	4	7 70	4	7 78	4	8 31	4
Latimer Road	3 76	2	4 55	3	5 54	3	5 79	3	6 32	3	6 59	3	7 8	4	7 16	4	7 49	4
Notting Hill -	3 41	2	4 20	3	5 19	3	5 44	3	5 77	3	6 24	3	6 53	3	6 61	3	7 14	4
Westbourne Park.	3 2	2	3 61	2	4 60	3	5 5	3	5 38	3	5 65	3	6 14	3	6 22	3	6 55	3
Royal Oak -	2 33	2	3 12	2	4 11	3	4 36	3	4 69	3	5 16	3	5 45	3	5 53	3	6 6	3

—	Mark Lane.		Monument.		Cannon Street.		Praed Street.		Bayswater.		Notting Hill Gate.		Kensington High Street.		Gloucester Road.		South Kensington	
	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.
	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.
Addison Road	8 57	4	9 2	4	9 18	4	—	—	—	—	—	—	—	—	—	—	—	—
Uxbridge Road	8 10	4	8 35	4	8 51	4	—	—	—	—	—	—	—	—	—	—	—	—
Hammersmith	9 4	4	9 29	4	9 45	4	4 37	3	5 6	3	5 45	3	6 12	3	6 58	3	7 14	—
Shepherds Bush	8 26	4	8 51	4	8 67	4	3 59	2	4 28	3	4 67	3	5 34	3	6 0	3	6 36	3
Latimer Road	7 [illegible]	4	7 69	4	8 5	4	2 77	2	3 46	2	4 5	2	4 52	3	5 18	3	5 54	3
Notting Hill	7 9	4	7 34	4	7 50	4	2 42	2	3 11	2	3 50	2	4 17	2	4 63	3	5 19	3
Westbourne Park	6 50	3	6 75	3	7 11	4	2 3	2	2 52	2	3 11	2	3 58	2	4 24	2	4 60	3
Royal Oak	6 1	3	6 26	3	6 42	3	1 34	2	2 3	2	2 42	2	3 9	2	3 55	2	4 11	2

NOTE.—The whole of the above fares, except those from Great Western Main Line Stations (Southall to Acton inclusive) apply in both directions.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually run in the years 1883, 1890, and 1894 respectively by the GREAT WESTERN RAILWAY COMPANY.

Portion of Company's Line.	Details of Trains.							
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.
						M. C.		M. C.
GREAT WESTERN MAIN LINE.								
Southall to Bishop's Road	Nil	Nil	Nil	Nil	Nil	Nil	1	8 70
HAMMERSMITH AND CITY JOINT AND METROPOLITAN LINES.								
Hammersmith to Aldgate	Nil	Nil	—*	—*	—*	—*	3	25 64
Addison Road to Aldgate	Nil	Nil	Nil	Nil	2	16 42	3	24 63
Aldgate to Addison Road	Nil	Nil	Nil	Nil	Nil	Nil	1	8 21
Total	Nil	Nil	Nil	Nil	2	16 42	8	67 58

* *See* Metropolitan return.

No. 9.

LONDON AND NORTH-WESTERN RAILWAY.

Workmen's Trains and Fares in Metropolitan District.

The London and North-Western Railway Company are under no statutory obligations to run workmen's trains beyond the requirements contained in section 3 of the Cheap Trains Act of 1883.

The cheap trains run by that company for the conveyance of workmen at reduced fares are as follows:—

5.59 and 6.59 a.m. Harrow to Euston, and 7.25 a.m. Willesden Junction to Euston.

Cheap tickets issued by these trains from Willesden Junction, Queen's Park, Kilburn, and Loudoun Road to Euston, and (by the 5.59 and 6.59 a.m. from Harrow) from the same stations to Broad Street, Camden Town, Barnsbury, Maiden Lane, Dalston, Highbury, Canonbury, and Mildmay Park. Cheap tickets are also issued by the first two trains from Harrow and Sudbury and Wembley to Euston, also from Harrow to Willesden Junction.

5.15 *and* 7.2 *a.m. Willesden Junction to Broad Street* (*North London Trains*).

Cheap tickets are issued by these trains from Willesden Junction, Queen's Park, Kilburn, and Loudoun Road to Broad Street, Camden Town, Barnsbury, Maiden Lane, Dalston, Highbury, Canonbury, and Mildmay Park; they are also issued from the same stations to Euston by the 5.15 a.m. train (passengers change at Chalk Farm, and proceed thence to Euston by the 5.35 a.m. Chalk Farm to Euston).

7.44 *a.m. Harrow to Euston.*

Cheap tickets issued by this train from Harrow and Sudbury and Wembley to Euston and from Harrow to Willesden.

Fares and Distances.

From	Willesden Junction.		Euston.		Broad Street.		Stations between Camden Town and Dalston inclusive.	
	Fares.	Miles.	Fares.	Miles.	Fares.	Miles.	Fares.	Miles.
	d.		*d.*		*d.*		*d.*	(Dalston.)
Harrow	4½	6	6	11½	—	—	—	—
Sudbury and Wembley	—	—	6	8	—	—	—	—
Willesden Junction	—	—	4	5½	4	10	4	7¾
Queen's Park	—	—	3	3¾	4	8¼	4	6
Kilburn	—	—	2½	3	4	7½	4	5¼
Loudoun Road	—	—	2	2¼	4	6¾	4	4¾

The fares given above are for *daily* tickets, but weekly tickets are also issued (at six times the daily fare) to *Euston*, and also from Harrow to Willesden Junction, but not to Broad Street or to North London stations.

The workmen's tickets can be obtained by anyone applying for them by the authorised trains, and the conditions printed upon the back of them limit the liability of the company to 100*l*.

Composition of London and North-Western Trains.

5.59 ex. Harrow.

2 first, 1 second, 5 thirds, and composite brake van.
Seating capacity—80 first, 100 second, 210 third.

7.44 a.m. ex. Harrow.

2 firsts, 2 seconds, 3 third composites.
Seating capacity—80 first, 100 second, 130 third.

6.59 a.m. ex. Harrow.

3 composites, 2 thirds, and brake van.
Seating capacity—36 first, 30 second, 120 third.

7.25 a.m. ex. Willesden.

1 first, 3 seconds, 4 thirds, 2 composites.
Seating capacity—64 first, 150 second, 190 thirds.

Composition of North London Trains.

2 firsts, 3 seconds, 3 thirds, 2 composites.
Seating capacity—96 first, 180 second, 180 third.

STATEMENT showing the WORKMEN'S DAILY TICKETS issued from Stations, Loudoun Road to Harrow inclusive, to Euston, &c., during the Months of November and December 1893.

Booking Stations.	Month.	To				
		Stations Camden Town to Dalston, both inclusive.	Euston.	Broad Street.	Willesden.	Total.
		Passengers.	Passengers.	Passengers.	Passengers.	Passengers.
Loudoun Road	November	8	30	62	—	100
	December	11	13	48	—	72
Kilburn and Maida Vale	November	516	1,554	481	—	2,551
	December	424	1,325	458	—	2,207
Queen's Park	November	448	2,247	1,077	—	3,772
	December	401	2,049	849	—	3,299
Willesden	November	318	1,994	916	—	3,228
	December	326	1,709	881	—	2,916
Sudbury and Wembley	November	—	223	—	—	223
	December	—	197	—	—	197
Harrow	November	—	567	—	237	804
	December	—	497	—	183	680
Total November		1,290	6,615	2,536	237	10,678
Total December		1,162	5,790	2,236	183	9,371
Grand Total		2,452	12,405	4,772	420	20,049

NOTE.—Each passenger represents a return ticket.

STATEMENT showing the WORKMEN'S DAILY TICKETS issued from Stations, Loudoun Road to Harrow inclusive, to Euston, &c., during the Year 1893.

Booking Stations.	To				
	Stations Camden Town to Dalston, both inclusive.	Euston.	Broad Street.	Willesden.	Total.
	No. of Passengers.	No. of Passengers.	No. of Passengers.	No. of Passengers.	No. of Passengers.
Loudoun Road	208	245	697	—	1,150
Kilburn and Maida Vale	3,024	15,437	7,083	—	25,544
Queen's Park	4,975	25,873	9,032	—	39,880
Willesden	1,896	22,550	11,561	—	36,007
Sudbury and Wembley	—	2,198	—	—	2,198
Harrow	—	3,762	—	1,400	5,162
Total	10,103	70,065	28,373	1,400	109,941

Notes.—1. Each passenger represents one return ticket.
2. The Harrow to Willesden tickets were brought into operation on 1st May 1893.

STATEMENT showing the WORKMEN'S TRAINS required to be run by Special Act of Parliament, and also those actually running in the Years 1883, 1890, and 1894, on the London and North-Western Railway.

Portion of Company's Line between	Trains required by Special Acts.		Trains running in					
			1883.		1890.		1894.	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.
						M. C.		M. C.
*Willesden Junction and Broad Street.	—	—	—	—	2	8 40	2	8 40
Queen's Park and Kilburn and Broad Street.	—	—	—	—	1	7 79	—	—
Willesden Junction and Euston.	—	—	—	—	2	10 58	3	16 0
Chalk Farm and Euston	—	—	—	—	1	1 21	1	1 20
†Harrow and Euston	—	—	—	—	—	—	3	18 20
Sudbury and Euston	—	—	—	—	1	2 86	—	—
	—	—	—	—	7	32 57	9	44 0

* These are North London trains, and the mileage on London and North-Western Line (Willesden Junction to Chalk Farm) only is shown.

† These are two of the trains by which cheap tickets are also issued from Willesden to Euston, therefore mileage from Harrow to Willesden only is inserted. By the third train tickets are only issued to Willesden, and mileage from Harrow to Willesden only is shown.

No. 10.

LONDON AND SOUTH-WESTERN RAILWAY.

This Company is not under any Statutory Obligations to run Workmen's Trains other than that mentioned in Section 3 of Cheap Trains Act of 1883.

The Stations from which such Tickets are issued in the Suburban District are as follows:—

From	To	Distance.	Daily Fares.	Trains available by
		M. C.	*d.*	
Waterloo or Vauxhall	Clapham Junction	3 76	3	Any train before 7.30 a.m.
" "	Wandsworth	4 60	4	" "
" "	Putney	5 75	5	" "
" "	Barnes	7 10	5	" "
" "	Kew Bridge	9 56	6	" "
" "	Brentford	10 55	7	" "
" "	Isleworth	12 14	7	" "
" "	Hounslow	13 45	8	" "
" "	Mortlake	8 22	6	" "
" "	Richmond	9 65	6	" "
" "	Twickenham	11 37	7	" "
" "	Teddington	13 58	7	" "
" "	Kingston	12 11	7	" "
" "	Earlsfield	5 49	4	" "
" "	Wimbledon	7 25	5	" "
" "	Malden	9 66	6	" "
" "	Surbiton	12 5	7	" "
" "	Southfields	6 58	5	" "
" "	Wimbledon Park	7 51	5	" "
Queen's Road	Waterloo	2 54	2½	5.4, 5.17, 5.39, 5.49, 6.4, 6.14, 6.29, 6.39, 6.50, 6.57, 7.23, 7.32, 7.39, and 7.44 a.m.
Clapham Junction	"	3 76	3	5.0, 5.12, 5.35, 5.45, 6.0, 6.10, 6.25, 6.32, 6.40, 6.45, 6.53, 7.14, 7.20, 7.26, 7.28, and 7.43 a.m.
Wimbledon Park	"	7 51	5	7.31 a.m.
Southfields	"	6 58	5	7.34 a.m.
East Putney	"	5 62	5	7.37 a.m.
Wandsworth	"	4 60	4	5.31, 5.42, 6 6, 6.28, 6.50, 7.16, 7.25, and 7.40 a.m.
Putney	"	5 75	5	5.27, 5.38, 6.2, 6.24, 6.46, 7.13, and 7.21 a.m.
Barnes	"	7 10	5	5.23, 5.35, 5.58, 6.20, 6.42, 7.9, and 7.17 a.m.

From	To	Distance. M.	C.	Daily Fares. d.	Trains available by
Chiswick	Waterloo	8	52	6	6.15, 7.12, and 7.55 a.m.
Kew Bridge	,,	9	56	6	6.12, 7.9, and 7.52 a.m.
Brentford	,,	10	55	7	6.8, 7.5, and 7.48 a.m.
Isleworth	,,	12	14	7	6.4, 7.1, and 7.44 a.m.
Hounslow	,,	13	45	8	6.0, 6.57, and 7.40 a.m.
Feltham	,,	14	70	9	6.50 and 7.51 am.
Ashford	,,	17	44	10	7.46 am.
Mortlake	,,	8	22	6	5.19, 5.54, 6.38, 7.5, and 7.36 a.m.
Richmond	,,	9	65	6	5.14, 5.49, 6.33, 7.0, and 7.31 a.m.
St. Margaret's	,,	10	68	6½	6.29 and 7.27 a.m.
Twickenham	,,	11	37	7	5.9, 5.44, 6.26, and 7.24 a.m.
Strawberry Hill	,,	12	25	7	5.4, 5.39, 6.22, 7.20, and 7.38 a.m.
Teddington	,,	13	58	7	5.1, 5.36, 6.18, 6.53, 7.16, and 7.34 a.m.
Hampton Wick	,,	12	48	7	4.57, 5.32, 6.14, 6.57, 7.12, and 7.30 a.m.
Kingston	,,	12	11	7	4.55, 5.30, 6.10, 6.12, 6.43, 7.2, 7.10, 7.28, and 7.35 a.m.
Fulwell	,,	12	76	8	7.49 am.
Hampton	,,	14	49	10	7.45 a.m.
Sunbury	,,	16	66	10	7.40 a.m.
Shepperton	,,	18	75	11	7.35 a.m.
Earlsfield	,,	5	49	4	5.7, 5.29, 5.54, 6.34, 7.8, 7.22, 7.50, 7.56, and 8.0 a.m.
Wimbledon	,,	7	25	5	5.2, 5.25, 5.50, 6.30, 7.3, 7.18, 7.45, 7.51, and 7.54 am.
Raynes Park	,,	8	58	6	5.41, 6.20, 6.59, 7.14, and 7.47 a.m.
Worcester Park	,,	10	58	6	7.38 and 8.12 a.m.
Ewell	,,	12	79	8	7.33 and 8.6 am.
Malden	,,	9	66	6	4.56, 5.37, 6.17, 6.55, 7.10, 7.43, and 7.48 a.m.
Norbiton	,,	11	27	7	5.33, 6.13, 6.46, 7.5, and 7.38 a.m.
Chertsey	,,	22	32	11	7.15 a.m.
Addlestone	,,	20	75	10	7.20 a.m.
Weybridge	,,	19	14	9	7.34 a.m.
Walton	,,	17	11	9	7.41 a.m.
Surbiton	,,	12	5	7	4.50, 6.50, and 7.42 a.m.
Thames Ditton	,,	14	5	8	4.44, 6.40, and 7.36 a.m.
Hampton Court	,,	15	5	8	4.40, 6.35, and 7.32 a.m.
Wandsworth	Kew Bridge	4	76	4	5.45, 7.25, and 7.39 a.m.
,,	Hounslow	8	65	6	
,,	Richmond	5	5	3	4.38, 6.21, 7.11, and 7.15 a.m.
,,	Twickenham	6	57	5	4.38, 6.21, 7.11, and 7.15 a.m.
,,	Kingston	10	21	5	4.38, 6.21 and 7.11 a.m.
,,	Hampton	9	69	7	7.15 a.m.
Richmond	Clapham Junction	5	69	3	5.14, 5.49, 6.33, 7.0, and 7.31 a.m.
,,	Teddington	3	49	3	4.54, 6.38, and 7.27 a.m.
,,	Hampton Wick	4	58	4	
,,	Kingston	5	16	4	
,,	Fulwell	3	11	3	7.32 and 7.56 a.m.
,,	Hampton	4	64	4	
,,	Sunbury	7	1	5	
,,	Shepperton	9	10	6	
Strawberry Hill	Richmond	2	40	3	5.4, 5.39, 6.22, 7.20, and 7.38 a.m.
,, ,,	Putney	6	30	5	
,, ,,	Clapham Junction	10	70	5	6.49 a.m.
,, ,,	Wimbledon	7	41	5	
Fulwell	Richmond	3	11	3	7.49 a.m.
,,	Putney	7	1	5	
,,	Clapham Junction	9	2	5	
Woking	Weybridge	5	19	5	7.23 and 8.40 a.m.
,,	Guildford	6	0	5	7.33 a.m.
Weybridge	Woking	5	19	5	6.29, 7.20, and 8.3 a.m.
Addlestone	,,	5	71	5	7.7 a.m.
Feltham	Twickenham	3	32	4	7.51 a.m.
,,	Richmond	5	5	5	
,,	Hounslow	2	31	4	6.50 a.m.
,,	Isleworth	3	62	4	
,,	Kew Bridge	6	20	5	
,,	Clapham Junction	10	74	8	6.50 and 7.51 a.m.
Queen's Road	Isleworth	9	40	7	5.38, 7.18, and 7.32 a.m.
,, ,,	Richmond	7	11	6	6.13, 7.3, and 7.8 a.m.
,, ,,	Kingston	12	27	7	6.13 and 7.3 a.m.
,, ,,	Wimbledon	8	47	5	6.49 and 7.28 a.m.

From	To	Distance.	Daily Fares.	Trains available by
		M. C.	*d.*	
Clapham Junction -	Wimbledon - -	3 29	4	5.36, 6.16, 6.31, 7.2, 7.22, and 7.37 a.m.
" " - -	Raynes Park -	4 62	4	6.16 and 7.37 a.m.
" " - -	Chiswick - -	4 56	4	5.42, 7.22, and 7.36 a.m.
" " - -	Mortlake - -	4 26	3	4.35, 6.18 and 7.8 a.m.
" " - -	Kingston - -	8 15	5	4.35, 6.18, 7.8, and 7.46 a.m.
" " - -	Norbiton - -	7 31	5	7.46 a.m.
Putney - - -	Kingston - -	9 6	5	4.41, 6.25 and 7.15 a.m.
Teddington - -	Richmond - -	3 49	3	5.1, 5.36, 6.18, 7.16, and 7.34 a.m.
" - - -	Clapham Junction -	9 38	5	
" - - -	Wimbledon - -	6 32	5	6.53 a.m.
Hampton Wick - -	Richmond - -	4 58	4	4.57, 5.32, 6.14, 7.12, and 7.30 a.m.
" " - -	Clapham Junction -	10 47	5	
" " - -	Wimbledon - -	5 23	5	6.57 a.m.
Feltham - -	Clapham Junction -	10 74	8	6.50 and 7.51 a.m.
Kingston - -	" " -	8 15	5	4.55, 5.30, 6.10, 6.12, 6.43, 7.2, 7.10, and 7.28 a.m.
Hampton Wick - -	" " -	10 47	5	4.57, 5.32, 6.14, 7.12, and 7.30 am.
Teddington - -	" " -	9 38	5	5.1, 5.36, 6.18, 7.16, and 7.34 a.m.
Strawberry Hill - -	" " -	8 29	5	5.4, 5.39, 6.22, 7.20, and 7.38 a.m.
Norbiton - -	" " -	7 31	5	5.33, 6.13, 6.46, and 7.5 a.m.
Wimbledon - -	" " -	3 29	4	5.2, 5.25, 5.50, 6.30, 7.3, and 7.18 a.m.
Twickenham - -	" " -	7 41	5	5.9, 5.44, 6.26, and 7.24 a.m.
Richmond - -	" " -	5 69	3	5.14, 5.49, 6.33, 7.0, and 7.31 a.m.
Mortlake - -	" " -	4 26	3	5.19, 5.54, 6.38, 7.5, and 7.36 a.m.
Kingston - -	Wimbledon - -	4 66	4	5.30, 6.10, 6.43, 7.2, and 7.35 a.m.
" - - -	Richmond - -	5 16	4	4.55, 5.30, 6.12, 7.10, and 7.28 a.m.
" - - -	Clapham Junction -	8 15	5	4.55, 5.30, 6.10, 6.12, 6.43, 7.2, 7.10, and 7.28 a.m.
Hampton - -	Richmond - -	4 64	4	7.45 a.m.
Surbiton - - -	Wimbledon - -	4 60	4	4.50, 6.50, and 7.42 a.m.

The holders of workmen's tickets can only travel with those tickets by the trains shown above, and if used by any other train the full ordinary fare is charged.

The tickets are available for return by any train after 12.0 noon.

Public announcements are issued giving this information.

The tickets are used only when going to and returning from work, and only by the appointed trains. They are issued subject to the Company's bye-laws and regulations as contained in the time books and bills, and subject also to this special condition, that the liability of the Company to make compensation for injury, or otherwise, in respect to the holder, shall be limited to a sum not exceeding 100*l*., and the amount of compensation (within that limit) shall be determined by an arbitrator to be appointed by the Board of Trade. The use of the ticket by the holder will be taken as evidence of a special contract upon such condition. These conditions are printed on the back of the tickets.

The tickets are available in the third-class carriages only, and the amount of luggage is understood to be limited to the usual workmen's hand basket of tools.

The number of daily tickets issued in October 1893 was 188,134 and in November 1893, 177,382.

The total number of tickets issued for the year 1893 was 1,532,856 daily tickets, and 65,329 weekly tickets.

The total number issued from Clapham Junction to Waterloo for the year 1893 was 470,861 daily tickets.

There are eight trains formed as workmen's trains, viz:—

1. 4.35 a.m., Hampton Court to Waterloo, 9 large thirds, 2 composite, and 2 third-class breaks.
2. 5.0 a.m., Clapham Junction to Waterloo, 9 thirds, 2 composite, and 2 third-class breaks.
3. 4.55 a.m., Kingston to Waterloo, 10 (forty) thirds, 5 (fifty) thirds, 2 composite and 2 vans.
4. 5.30 a.m., Kingston to Waterloo, 12 large thirds, 2 composite, and 2 third-class brakes.
5. 5.35 a.m., Barnes to Waterloo, 5 (sixty) thirds, 2 triple composite, 2 composite, and 2 third-class brakes.

6. 5.50 a.m., Wimbledon to Waterloo, 8 (fifty) thirds, 2 (sixty) thirds, 2 composite, and 2 third-class brakes.

7. 7.20 a.m., Leatherhead to Waterloo, 6 (fifty) thirds, 3 (sixty) thirds, 2 composite, and 2 third-class brakes.

8. 7.30 a.m., Hampton Court to Waterloo, 13 large thirds, 2 composite, and 2 third-class brakes.

These trains fully meet the requirements of the traffic and are never over-crowded.

Third-class season tickets, available for three months, are issued between the following stations at the under-mentioned rates, with a deposit of 2*s.* 6*d.* on each ticket.

	£	*s.*	*d.*
Waterloo and Queen's Road - -		17	6
„ Clapham Junction - -	1	2	6
„ Wandsworth - -	1	10	0
„ Earlsfield - - -	1	12	6

These tickets are not subject to the reduction of 10 or 15 per cent. allowed on family tickets, nor are they issued at half price to scholars, students, and others.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually running in the Years 1883, 1890, and 1894 respectively, on the LONDON AND SOUTH-WESTERN RAILWAY.

Portion of Company's Line.	Details of Trains.							
	Required by the Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.
				M. C.		M. C.		M. C.
To and from—								
Waterloo and Clapham Junction -	—	—	3	11 20	23	86 20	33	130 28
Clapham Junction and Barnes -	—	—	1	7 0	10	32 40	19	60 26
Barnes and Hounslow - -	—	—	2	26 40	6	39 0	6	38 50
Barnes and Strawberry Hill - -	—	—	—	—	5	27 40	10	51 70
Strawberry Hill and Hampton -	—	—	—	—	2	4 0	3	6 72
Strawberry Hill and Kingston -	—	—	3	45 0	5	12 40	8	21 48
Wandsworth and Wimbledon Park -	—	—	—	—	2	5 40	3	8 53
Clapham Junction and Raynes Park	—	—	—	—	5	25 0	9	42 78
Raynes Park and Ewell - - -	—	—	—	—	3	12 60	4	17 4
Raynes Park and Malden - -	—	—	—	—	9	9 0	12	13 16
Malden and Kingston - - -	—	—	—	—	3	6 60	6	13 70
Malden and Surbiton - - -	—	—	3	36 0	6	13 40	8	17 72
Surbiton and Hampton Court - -	—	—	—	—	3	9 0	3	9 0
Surbiton and Weybridge - -	—	—	—	—	4	30 0	2	14 18
Total - - -	—	—	12	125 60	86	313 20	126	446 45

This return shows the morning trains only. All trains after 12 noon are available for the return of holders of workmen's tickets.

No. 11.

MIDLAND RAILWAY.

The statutory obligations of the Midland Railway Company with regard to the running of workmen's trains are those contained in the Cheap Trains Act, 1883. The Midland Company commenced to run a workmen's train from Harringay Park to Moorgate Street on March 2nd, 1885, and it was extended to South Tottenham on the 20th July 1885.

The following is the time-table of the train :—

		A.M.
South Tottenham and Stamford Hill	depart	4 55
St. Ann's Road	„	4 57
Harringay Park, Green Lanes	„	5 0
Crouch Hill	„	5 4
Hornsey Road	„	5 7
Upper Holloway	„	5 10
Junction Road	„	5 12
Highgate Road	„	5 14
Kentish Town	„	5 18
Camden Road	„	5 20
King's Cross	arrive	5 25
Farringdon Street	„	5 29
Aldersgate Street	„	5 31
Moorgate Street	„	5 33

The Midland Company also commenced to run a workmen's train from Hendon to Moorgate Street on June 12th, 1893, and the following is the time-table of the train :—

		A.M.
Hendon	depart	5 40
Child's Hill	„	5 45
Finchley Road	„	5 50
Haverstock Hill	„	5 54
Kentish Town	„	5 57
King's Cross	arrive	6 5
Farringdon Street	„	6 9
Aldersgate Street	„	6 11
Moorgate Street	„	6 13

The fares and distances are as follows :—

Stations.	King's Cross.		Farringdon Street.		Aldersgate Street.		Moorgate Street.	
	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.	Distance.	Fare.
	M. C.	d.	M. C.	d.	M. C.	d.	M. C.	d.
South Tottenham	6 19	3	7 10	3½	7 36	3½	7 72	3½
St. Ann's Road	5 71		6 62		7 8		7 44	
Harringay Park	5 8		5 79		6 25		6 61	
Crouch Hill	4 13		5 4		5 30		5 66	
Hornsey Road	3 64	3	4 55	3½	5 1	3½	5 37	3½
Upper Holloway	3 33		4 24		4 50		5 6	
Junction Road	2 76		3 67		4 13		4 49	
Highgate Road	2 41		3 32		3 58		4 14	
Kentish Town	1 73	2	2 64	3	3 10	3	3 46	3
Camden Road	1 37		2 28		2 54		3 10	
Hendon	7 21	4	8 12	4	8 38	4	8 74	4
Child's Hill	5 35		6 26		6 52		7 8	
Finchley Road	3 61	2	4 52	3	4 78	4	5 34	4
Haverstock Hill	2 47	2	3 38	3	3 64	3	4 20	3

The tickets are available for the return journey in third-class carriages by any Midland train starting from Moorgate Street after 12.0 noon on the day of issue.

The conditions under which the tickets are issued, and which are printed on the back of the tickets, are :—

"This ticket is issued subject to the regulations and conditions stated in the Company's time-tables and bills."

The number of tickets issued from South Tottenham, St. Anne's Road, Harringay Park, Crouch Hill, Hornsey Road, Upper Holloway, Junction Road, Highgate Road, Kentish Town, Camden Road, Hendon, Child's Hill, Finchley Road, and Haverstock

Hill, to King's Cross, Farringdon Street, Aldersgate Street, and Moorgate Street, for the month of—

June 1893, was 7,601,
and
November 1893, was 5,765.

The total number of workmen's tickets issued by the Company in London and the suburbs during the year 1893 was 72,636.

The train from South Tottenham consists of 12 first and 37 third-class compartments. The carriages used form one of the ordinary trains running between Tottenham and Moorgate Street, containing the largest number of third-class carriages.

The train from Hendon consists of 12 first and 37 third-class compartments, and is of a similar description to the South Tottenham train.

No complaint has been received of the trains being overcrowded.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and also those actually running in the years 1883, 1890, and 1894 respectively, on the MIDLAND RAILWAY.

Portion of Company's Line.	Details of Trains.							
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.	
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.
						M. C.		M. C.
South Tottenham to Moorgate Street.	Nil	Nil	Nil	Nil	1	7 72	1	7 72
Hendon to Moorgate Street -	Nil	Nil	Nil	Nil	Nil	Nil	1	8 74
Total - -	Nil	Nil	Nil	Nil	1	7 72	2	16 66

No. 12.
SOUTH-EASTERN RAILWAY.

This Company is not under any statutory obligations to run workmen's trains. The following trains are now running :—

Workmen's Trains, April 1894.

UP.

1. At 5.17 a.m. from Maze Hill, calling at all stations, and reaching London Bridge at 5.31 and Charing Cross 5.48.

2. At 4.55 a.m. from Plumstead, viâ New Cross, calling at all intermediate stations except Spa Road, and reaching London Bridge at 5.37 and Charing Cross at 5.52.

3. At 5.20 from Dartford, viâ Maze Hill, reaching London Bridge at 6.10, and Charing Cross at 6.25.

4. At 6.5 a.m. from Maze Hill, calling at all stations to London Bridge, where it arrives at 6.20 and at Charing Cross at 6.35.

5. At 6.27 a.m. from Blackheath, calling at Lewisham, St. John's, and New Cross, to London Bridge, where it is due at 6.47 and Cannon Street at 6.50.

6. At 6.5 a.m. from Dartford to Erith.

7. At 7.15 a.m. from Dartford to Plumstead and Woolwich, arriving at 7.35 and 7.40 a.m.

DOWN.

At 4.45 a.m. from Cannon Street, viâ Maze Hill, calling at all stations, and reaching Woolwich Dockyard at 5.17, Woolwich Arsenal at 5.20, Erith at 5.37, and Dartford at 5.46.

At 4.55 a.m. from Charing Cross to Plumstead, viâ Maze Hill, calling at all stations, and reaching Woolwich Dockyard at 5.40, Woolwich Arsenal at 5.45, and Plumstead at 5.48.

At 7.0 am. from Charing Cross to Woolwich and Plumstead, arriving at 7.44 and 7.48 a.m.

For the return journey the tickets are available by any train after 4.0 p.m. and after 12 noon on Saturdays.

RETURN of WORKMEN'S TICKETS issued during the months of November and December 1893, and also during the entire year 1893. These numbers are not doubled.)

	Numbers.
1893, November	47,721
„ December	41,465
Total for the year 1893	584,804

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT OF PARLIAMENT, and also those actually running in the Years 1883, 1890, and 1894 respectively, on the SOUTH-EASTERN RAILWAY.

Portion of Company's Line.	Details of Trains.								
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
				Up.					
				M. C.		M. C.		M. C.	
North Kent	Nil	Nil	1	11 25	1	11 25	1	11 25	No. 2.
	—	—	—	—	1	17 25	1	17 25	No. 3.
	—	—	—	—	1	5 65	1	5 65	No. 5.
	—	—	—	—	—	—	1	3 9	No. 6.
	—	—	—	—	—	—	1	7 78	No. 7.
Greenwich	Nil	Nil	1	6 24	1	6 24	1	6 24	No. 1.
Greenwich	—	—	—	—	1	6 24	1	6 24	No. 4.
				Down.				Down.	
Greenwich and North Kent	—	—	—	—	—	—	1	9 77	
Greenwich and North Kent	—	—	—	—	—	—	1	9 77	
Greenwich and North Kent	—	—	—	—	1	13 3	1	16 12	
Total	—	—	2	17 49	6	60 6	10	94 16	

No. 13.

LONDON, TILBURY, & SOUTHEND RAILWAY.

This Company is not under any statutory obligations to run Workmen's Trains other than those mentioned in section 3 of the Cheap Trains Act, 1883.

Under this Company's Act of 1882, section 50, they may run Workmen's Trains, and at their option discontinue such trains if they think fit. If the trains are run under this section compensation for injury is limited.

The Company is running the following Workmen's Trains on week days :—

		A.M.	A.M.	A.M.	A.M.	A.M.	A.M.
Barking	dep.	4 45	5 20	6 10	—	—	6 55
East Ham	„	4 49	5 24	6 13	6 42	—	6 59
Upton Park	„	4 52	5 27	6 16	6 45	6 55	—
Plaistow	„	4 55	5 31	6 19	6 49	—	—
Bromley	„	4 59	5 35	6 22	6 53	—	7 6
Burdett Road	arr.	5 3	5 38	6 26	6 57	7 4	7 10
Stepney	„	5 6	5 41	6 29	7 0	7 7	7 13
Fenchurch Street	„	5 11	5 46	6 34	7 5	7 12	7 18

Fares.

From *Barking or *East Ham to London (Fenchurch Street)	3*d.*
From *Upton Park to London (Fenchurch Street)	2½*d.*
From *Plaistow or *Bromley to London (Fenchurch Street)	2*d.*
From Barking or East Ham to Bromley	3*d.*
From Upton Park to Bromley	2½*d.*

Workmen's tickets can be obtained at the Booking Offices every evening after 4.0 p.m., for use on the following day, except those issued on Saturdays, which are available on the following Monday.

Workmen's Tickets in Packets.

On every Saturday, after 12 noon, and on Sundays during booking hours, six return workmen's tickets to London are issued for use in the following week, and the price of the six tickets is as under :—

From Barking or East Ham	1*s.* 6*d.*
From Upton Park	1*s.* 3*d.*
From Bromley or Plaistow	1*s.* 0*d.*

Each ticket is available for one return journey on the day shown upon it, and no refund can be allowed for tickets which are not used.

Workmen's tickets are available to return by any train on the day of issue only.

The above tickets are issued subject to the provisions of the Company's Act, 45 & 46 Vict., 1882, c. 143, and the use by the holder is received as evidence of a special contract upon those conditions.

Holders of workmen's tickets travelling to stations other than those for which their tickets are available will be charged the ordinary fare from the station whence the train started.

Cheap third-class return tickets for Fenchurch Street, Stepney, and Burdett Road, are issued as under :—

Week Days.

From	By Trains at		Fares.	
			Fenchurch St. and Stepney.	Burdett Road.
	A.M.	A.M.	*d.*	*d.*
Barking	7 10	7 40	7	7
East Ham	7 14	7 44	6	6
Upton Park	7 17	7 47	5	4
Plaistow	7 20	7 50	4	3½
Bromley	7 24	7 54	4	2½

These tickets are available to return by any train on the day of issue only.

The 4.45 a.m. train from Barking consists of 12 vehicles with a total sitting room accommodation for 504 passengers.

The 5.25 a.m. train from Barking consists of 17 vehicles with a total sitting room accommodation for 764 passengers.

The 6.10 a.m. train from Barking consists of 15 vehicles with a total sitting room accommodation for 644 passengers.

The 6.42 a.m. train from East Ham consists of 18 vehicles with a total sitting room accommodation for 794 passengers.

The 6.55 a.m. train from Upton Park consists of 19 vehicles with a total sitting room accommodation for 844 passengers.

The 6.55 a.m. train from Barking consists of 13 vehicles with a total sitting room accommodation for 534 passengers.

The number of return workmen's tickets issued in November 1893 was 79,780.

The number of return workmen's tickets issued in December 1893 was 69,714, the smaller number in the latter month being due to the Christmas holidays.

* These tickets are available at the option of the holders to alight at or return from Burdett Road or Stepney Station.

The total number for the year 1893 was 855,633.

The trains are made up to suit the requirements of the traffic, but there are occasions when one train may have a larger or smaller number of passengers than usual.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT OF PARLIAMENT, and also those actually running in the Years 1883, 1890, and 1894 respectively, on the LONDON, TILBURY, and SOUTHEND RAILWAY.

Portion of Company's Line.	Details of Trains.								Remarks.
	Required by Special Acts.*		Running in 1883.*		Running in 1890.*		Running in 1894.*		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
				M. C.		M. C.		M. C.	
Barking to Fenchurch Street -	Nil	Nil	3	22 67	3	22 67	4	22 67	*Section 50 of Company's Act of 1852 permissive, not obligatory.
Upton Park to Fenchurch Street.	Nil	Nil	Nil	Nil	1	5 31	1	5 31	
East Ham to Fenchurch Street -	Nil	Nil	Nil	Nil	Nil	Nil	1	6 14	
Total - -	Nil	Nil	3	22 67	4	28 18	6	34 32	

No. 14.

CITY AND SOUTH LONDON RAILWAY.

Length of Line, 3 miles 12 chains.

This Company is not under any statutory obligations to run Workmen's Trains beyond the requirements contained in section 3 of the Cheap Trains Act.

In place of tickets turnstiles are used on this railway and by all trains run before 7.30 a.m. (with the exception of Stockwell Station, where the fare charged is twopence) the uniform fare of one penny is charged at all stations for the whole length of the line.

The fares having to be paid at the turnstiles no reduction can be made for the return journey on the usual fares, but these are kept very low and in no case exceed twopence for the whole line.

The number of trains run daily at these fares before 7.30 a.m. is 13 up and 10 down.

THOMAS C. JENKIN,
General Manager.

STATEMENT showing the WORKMEN'S TRAINS required to be run by SPECIAL ACT of PARLIAMENT, and those actually running in the Year 1894 on the CITY AND SOUTH LONDON RAILWAY.

Whole Length of the Line.	Details of Trains.						Remarks.
	Required by Special Acts.		Running in 1890.		Running in 1894.		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	
						M. C.	
Whole length of the line -	Nil	Nil	Railway not opened		10	31 40	Down.
„ „	—	—	—	—	13	40 76	Up.

Railways (Workmen's Trains on the Metropolitan Lines).

GENERAL STATEMENT showing TOTAL NUMBER and MILEAGE of the TRAINS required to be run by SPECIAL ACT OF PARLIAMENT, and also of those actually running, in the Years 1883, 1890 and 1894 respectively, on the RAILWAYS of the COMPANIES having termini in the METROPOLIS.

Railway Company.	Details of Trains.								Remarks.
	Required by Special Acts.		Running in 1883.		Running in 1890.		Running in 1894.		
	No.	Mileage.	No.	Mileage.	No.	Mileage.	No.	Mileage.	
		M. C.		M. C.		M. C.		M. C.	
1. Great Eastern - -	5	22 20	23	116 40	52	*271 40	64	318 0	*Excluding boat trips.
2. London, Chatham, and Dover.	1	3 60	13	93 40	17	120 0	21	153 14	
3. Metropolitan - - -	2	9 40	12	98 0	26	200 60	81	536 20	
4. Metropolitan District -	1	5 15	5	28 57	30	232 2	39	344 21	
5. North London - - -	1	2 0	5	10 0	34	196 0	35	201 0	
6. London, Brighton, and South Coast.	1	4 40	32	217 60	36	278 50	43	315 16	
7. Great Northern - -	—	—	3	32 58	6	66 51	9	88 0	† *See* Metropolitan Railway.
8. Great Western - -	—	—	†	—	2	16 42	8	67 58	
9. London North-Western -	—	—	—	—	7	32 57	9	44 0	
10. London and South-Western	—	—	12	125 60	86	313 20	126	446 45	
11. Midland - - -	—	—	—	—	1	7 72	2	16 66	
12. South Eastern - - -	—	—	2	17 49	6	60 6	10	94 16	
13. London, Tilbury, and Southend.	—	—	3	22 67	4	28 18	6	34 32	
14. City and South London -	—	—	—	—	—	—	23	72 36	
Total - - - - -	11	47 15	110	763 31	307	1824 18	476	2732 04	

CHEAP WORKMEN'S TICKETS.

RETURN to an Order of the Honourable The House of Commons, dated 21 August 1894;—*for*,

COPY "of Correspondence between the Board of Trade and certain Railway Companies relative to the conditions upon which Tickets are issued at Cheap Rates to Workmen as regards the Limitation of the issuing Company's Liability in case of Injury or Death."

Board of Trade,
21 August 1894.

COURTENAY BOYLE.

(*Mr. Burt.*)

Ordered, by The House of Commons, *to be Printed*,
21 *August* 1894.

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316.

TABLE OF CONTENTS.

No.	Name.	Date.	Subject.	Page.
		1894:		
1	Board of Trade to certain Railway Companies.	13 July - -	Transmitting copies of Questions by Mr. Cyril Dodd in the House of Commons on the subject of the issue of cheap workmen's tickets, with a condition exempting the Railway Company from liability in case of injury or death, together with copies of the replies thereto, the form of Return suggested by Mr. Dodd, and copy of communication from Sir Henry Oakley; and asking for general observations and any preliminary information which can be properly given.	3
2	North London Railway Company to Board of Trade.	16 July - -	No workmen's tickets granted by the Company on condition of exemption from all liability for accidents.	6
3	London and South Western Railway Company to Board of Trade.	17 July - -	All cheap workmen's tickets are issued on conditions limiting the liability of the Company to 100*l.*	6
4	Great Eastern Railway Company to Board of Trade.	18 July - -	Liability of the Company for injury to passengers carried on their railway at fares not exceeding 1*d.* for the single, and 2*d.* for the double, journey is limited by Act of Parliament to a sum not exceeding 100*l.*	6
5	Great Northern Railway Company to Board of Trade.	24 July - -	No workmen's tickets are issued exempting the Company from liability in case of injury, but extent of liability is in all cases limited to 100*l.*	7
6	North Eastern Railway Company to Board of Trade.	3 August -	Workmen's tickets do not at present contain any condition exempting the Company from liability in case of injury or death. It is contemplated in future to insert a condition limiting liability to sum not exceeding 100*l.*	7
7	Lancashire and Yorkshire Railway Company to Board of Trade.	21 August -	Holders of workmen's tickets regarded as ordinary passengers, with two exceptions: one, in case of special trains run for certain works under arrangement with proprietors, who indemnify the Company against any claims; and the other, in case of tickets issued from one town, where liability is limited by notice on back of ticket to 100*l.*	8
8	London and North Western Railway Company to Board of Trade.	20 August -	Workmen generally who are conveyed by certain specified passenger trains running daily, stopping only at railway stations, and available for all persons, are supplied with tickets at reduced rates subject to condition that liability of Company is limited to a sum not exceeding 100*l.* The workmen referred to by Mr. Dodd are carried at early hours, and at very low fares, generally by special trains, or by goods and mineral trains, appointed to set men down at sidings, works, and other places situate some distance from the nearest railway station. Such special arrangements made at earnest solicitation of traders. Service extraordinary and usual terms and conditions inapplicable. Employers willing to enter into agreement exempting Company from liability. Copy of letter from the Company of 2nd May annexed.	8 9

COPY of Correspondence between the Board of Trade and certain Railway Companies relative to the conditions upon which Tickets are issued at Cheap Rates to Workmen as regards the limitation of the issuing Company's Liability in case of Injury or Death.

— No. 1. —

Board of Trade to Railway Companies.

Board of Trade (Railway Department),
7, Whitehall Gardens, London, S.W.,
13 July 1894.

Sir,

I AM directed by the Board of Trade to transmit to you herewith, for the information of the Directors, copies of questions that have recently been addressed by Mr. Cyril Dodd, M.P., to the President and Parliamentary Secretary of this Board in the House of Commons on the subject of the issue of cheap workmen's tickets, with a condition exempting the railway company from liability in case of injury or death; also copies of the replies thereto, and copy of the form of Return suggested by Mr. Dodd. Enclosures 1, 2, and 3. Enclosure 4.

Enclosed also is copy of a communication the Board of Trade have received from Sir Henry Oakley on the subject.

I am to state that the Board of Trade will be glad if the Directors will be good enough, so far as their railway is concerned, to cause this Department to be favoured with any general observations they may desire to make on the subject, and also with any preliminary information they can properly give having reference to the several heads indicated in the form of Return. Enclosure 5.

I am, &c.
(signed) *Francis J. S. Hopwood.*

The Secretary,
1. Great Northern.
2. London and North Western.
3. London and South Western.
4. North Eastern.
5. Great Eastern.
6. North London.
7. Lancashire and Yorkshire.
Railway Company.

Enclosure 1 to No. 1.

House of Commons, 7 May 1894.

WORKMEN'S CHEAP TICKETS.

Mr. *Dodd:* I beg to ask the President of the Board of Trade if his attention has been called to the condition contained in some of the workmen's cheap tickets by the London and North Western Railway Company to the effect that the workman, if injured on his journey, or his representatives, if he should be killed, should be entitled to no compensation even if injury or death were caused by the negligence of the company, and to the case of "Flowers *v.* the London and North Western Railway Company," tried at Cardiff, which appears to decide that

such a condition would in general be valid, but that an infant by reason of his infancy is not thereby bound; if he will consider the propriety of making such conditions in workmen's or passengers' tickets unlawful; whether as to cattle and goods the law is now that unreasonable conditions are of no force and invalid; and if he can state to what extent railway companies now issue tickets to workmen exempting themselves from their ordinary liability for negligence?

Mr. Mundella: My hon. Friend's question raises a nice point of law, and I am unable to express an opinion upon it. It is for the courts to decide whether the conditions imposed by the London and North Western Railway Company are reasonable. The contention of the company is that the special contract, in many cases, is made in return for facilities which the law does not compel the company to give. I am not aware that there is any general application of the ystem to which the hon. gentleman takes exception.

Enclosure 2 to No. 1.

House of Commons, 28 May 1894.

WORKMEN'S CHEAP TICKETS.

Mr. *Dodd:* I beg to ask the Secretary to the Board of Trade whether he can inform the House to what extent railway companies issue cheap workmen's tickets on the terms that if they are killed or injured on the line the company is not to be responsible or liable; and, if not, whether the Home Office will procure the information in the form proposed by the Return asked for, or in some similar form?

The Secretary to the Board of Trade (Mr. *Burt*): The Board of Trade have not the information to enable them to answer my honourable and learned Friend's question, and they feel that it is unreasonable that they should press the railway companies for a Return. The tickets would appear to be in the nature of contracts between the companies and passengers in return for facilities specially conceded, and they are quite distinct from any matter in regard to which the Board of Trade have administrative functions in connection with railway companies. I am, of course, unable to answer for the Home Office.

Mr. *Dodd:* Am I to understand that the Board of Trade declines or is unable to procure the necessary information?

Mr. *Burt:* They think it would not be reasonable to press the railway companies to make such a Return.

Mr. *Dodd:* Under these circumstances, I shall take an opportunity of calling the attention of the House to the matter.

Enclosure 3 to No. 1.

House of Commons, 2 July 1894.

WORKMEN'S CHEAP TICKETS.

Mr. *Dodd:* I beg to ask the President of the Board of Trade if he could, with the assistance of the principal railway companies, furnish to this House a Return showing the extent to which they issue cheap workmen's tickets with a condition exempting the company from liability if the workmen are injured on the journey, or killed by a railway accident.

And, if such a Return could be furnished in the form asked for on the Paper, or in some similar form.

Mr.

Mr. *Bryce*: I cannot promise the honourable and learned Member the Return to which he refers, but, as I informed him privately some days ago, I have directed communications to be addressed to some of the principal railway companies on the subject, and hope before long to be in a position to inform him of the result.

Enclosure 4 to No. 1.

WORKMEN'S CHEAP TICKETS.

Suggested Form of Return.

Mr. *Dodd*,—Railway Companies (Workmen's Tickets) :—

RETURN showing the Number of Workmen's Tickets issued in 1893 by Railway Companies in England and Wales, containing a condition exempting the Company from liability if the workman is injured or killed on his journey by the negligence of the carrying Company, in the following form :—

Company issuing.	Number issued in 1893.	Form of Condition.	Class of Train.	Journey.	Fare Charged.	Ordinary Fare.

Enclosure 5 to No. 1.

Sir *Henry Oakley* to Board of Trade.

The Great Northern Railway,
General Manager's Office, King's Cross Station,
London, N., 2 July 1894.

Sir,

So far as the Great Northern are concerned, all cheap workmen's tickets are issued on the condition limiting the liability to 100*l*.

We do not require a condition exempting the company from all liability.

Workmen's tickets are issued all over the country in mining and other districts, and there may be conditions with which I am not acquainted. I think, to ensure a full and correct Return, a circular should be issued to all railway companies.

I do not anticipate that any objection will be offered by any of the companies to such a Return.

I am, &c.
(signed) *H. Oakley.*

The Assistant Secretary (Railway Department),
Board of Trade, Whitehall, S.W.

— No. 2. —

North London Railway Company to Board of Trade.

North London Railway,
General Manager's Office, Broad Street Station,
Sir, London, E.C., 16 July 1894.

In reply to your letter of the 13th instant, the liability for accidents as regards workmen's tickets issued by this company, is limited, by Parliamentary enactment, to the sum of 100*l.*

No workmen's tickets are granted by the company on the condition of exemption from all liability for accidents.

I am, &c.
(signed) *J. Bolland Newton,*
General Manager.

The Assistant Secretary, Railway Department,
Board of Trade, Whitehall, S.W.

— No. 3. —

London and South-Western Railway Company to Board of Trade.

London and South-Western Railway,
General Manager's Office, Waterloo Station,
Sir, London, S.E., 17 July 1894.

With reference to your letter of the 13th instant, enclosing copies of questions that have been addressed by Mr. Cyril Dodd, M.P., to the President and Parliamentary Secretary of the Board of Trade, on the subject of workmen's tickets, &c., I beg to state that so far as the London and South-Western Railway Company is concerned, all cheap workmen's tickets are issued on conditions limiting the liability of the company to 100*l.* We do not require a condition exempting us from all liability.

The Return* forwarded to the Board of Trade with my letter of the 15th ultimo, in reply to your letter of the 4th April, will give you full particulars as to this company's workmen's ticket arrangements, fares, and the number of tickets issued.

I am, &c.
The Assistant Secretary, (signed) *Chas. Scotter.*
Railway Department, Board of Trade, S.W.

— No. 4. —

Great Eastern Railway Company to Board of Trade.

Great Eastern Railway,
General Manager's Office, Liverpool Street Station,
Sir, London, E.C., 18 July 1894.

In answer to your letter, dated the 13th instant, I beg to inform you that the liability of this company for injury to passengers carried over this railway at fares not exceeding 1*d.* for the single and 2*d.* for the double journey is limited by Acts of Parliament to a sum not exceeding 100*l.*

I have no paper showing the number of passengers carried at these fares for the year 1893, but they numbered some millions.

I am, &c.
The Assistant Secretary, (signed) *W. Birt.*
Railway Department, Board of Trade, S.W.

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* Note.—*See* Parliamentary Paper, "Railways (Workmen's Trains on the Metropolitan Lines)," of Session 1894.

— No. 5. —

Great Northern Railway Company to Board of Trade.

The Great Northern Railway,
General Manager's Office, King's Cross Station,
London, N., 24 July 1894.

Sir,

With reference to your letter of the 13th instant, I enclose the form of Return asked for. As stated in my letter of the 2nd instant, no workmen's tickets are issued by the Great Northern Company exempting the company from liability in case of injury.

I am, &c.
(signed) *H. Oakley.*

The Assistant Secretary,
Railway Department, Board of Trade, S.W.

Great Northern Railway Company.

Company Issuing.	Number Issued in 1893.	Form of Condition.	Class of Train.	Journey.	Fare Charged.	Ordinary Fare.

No workmen's tickets are issued by the Great Northern exempting the Company from liability in case of injury, but the extent of the liability is in all cases limited to 100*l.*

King's Cross Station, 24 July 1894.

— No. 6. —

North-Eastern Railway Company to Board of Trade.

North-Eastern Railway,
General Manager's Office, York,
3 August 1894.

Sir,

The Secretary referred to me your letter of the 13th ultimo, on the subject of the questions which have been recently addressed in the House of Commons to the President and the Parliamentary Secretary of the Board of Trade with reference to the issue of cheap workmen's tickets.

In reply, I beg to say that the special tickets issued by this company to workmen to enable them to travel by the workmen's trains upon various parts of the system do not at present contain any condition exempting the company from liability in case of injury or death which may be caused whilst travelling by the trains in question. It is, however, in contemplation to insert a condition in connection with the issue of such tickets in future limiting the company's liability in case of injury or death to a sum not exceeding 100*l.*

I am, &c.
(signed) *George S. Gibb.*

The Assistant Secretary,
Railway Department, Board of Trade, S.W.

— No. 7. —

Lancashire and Yorkshire Railway Company to Board of Trade.

Lancashire and Yorkshire Railway,
Secretary's Office, Manchester,
21 August 1894.

Sir,

With reference to your circular letter, dated the 13th July, on the subject of workmen's tickets, I beg to inform you that the holders of that description of tickets over this company's line are, in practically every case, regarded as ordinary passengers, so far as the liability of the company, in the case of either injury or death is concerned, with the following exceptions, viz. :—

1st. In one case, where we run trains specially for workmen connected with a certain works, under arrangement with the proprietors, who indemnify the company against any claim that may be made by the men using the trains.

2nd. We print on the back of daily workmen's tickets issued from one town on our system, a notice to the effect that the company will not be liable for compensation to a greater extent than 100*l.* in case of accident to the holder.

I am, &c.
(signed) *C. W. Bayley*,
Secretary.

The Assistant Secretary,
Railway Department, Board of Trade.

— No. 8. —

London and North-Western Railway Company to Board of Trade.

London and North-Western Railway,
General Manager's Office, Euston Station,
London, N.W., 20 August 1894.

Sir,

With reference to your letter of the 13th July, the circumstances under which the London and North-Western Railway Company convey workmen employed by certain traders at special fares, in consideration of being relieved from liability for personal injuries, were explained in my letter* to the Department dated the 2nd May last, and I have little to add now to the information given therein.

* *See* copy on page 9.

All workmen who avail themselves of the particular passenger trains appointed for their conveyance are supplied at the booking stations with tickets at a reduced rate, subject to the condition (which is printed on the back of each ticket) that the liability of the company to make compensation for injury or otherwise is limited to a sum not exceeding 100*l.* The exact amount of compensation, within the limit named, is to be settled, in case of difference, by an arbitrator to be appointed by the Board of Trade.

But the object of Mr. Dodd, M.P., is apparently to obtain an elaborate return of the number of workmen conveyed in the year 1893, under special contracts between their employers and the railway company, and, although it might be possible to supply some if not all the particulars mentioned in the form which accompanies your letter, the preparation of the information would be attended with considerable labour and expense.

There is a marked difference in the terms and conditions upon which the two descriptions of workmen are conveyed. Those mentioned in the second paragraph of this letter are conveyed by certain specified passenger trains which run daily, stop only at railway stations, and are available for all persons, whilst the workmen comprised in Mr. Dodd's inquiries are carried at early hours and at very low fares, generally by special trains put on for the purpose or by goods and mineral trains appointed to set the men down at sidings, works, and other places situate some distance from the nearest railway station. These special arrangements have been made, not at the request of the railway company, but at the earnest solicitation of traders desirous of getting their employés

employés to out-of-the-way places at early hours and under conditions as regards conveyance which the ordinary trains do not provide for. It is clear the company could not perform extraordinary services of the kind upon the terms and conditions applicable to workmen who travel by ordinary passenger trains, and, as the employers in the special cases named have been quite willing to enter into an agreement exempting the railway company from liability in the event of injury occurring to the men, we have, in the general interests of trade, thought it reasonable to comply with their wishes, leaving them to deal direct with their men upon questions of compensation for personal injuries.

I am, &c.
(signed) *F. Harrison.*

The Assistant Secretary,
Railway Department, Board of Trade, S.W.

Annex to No. 8.

London and North Western Railway,
General Manager's Office, Euston Station,
London, N.W., 2 May 1894.

Sir,

I BEG to acknowledge the receipt of your letter of the 1st instant, respecting the notice given by Mr. Dodd, M.P., of his intention to ask the President of the Board of Trade on Friday next, "whether his attention has been called to the condition contained in some of the workmen's cheap tickets issued by the London and North Western Railway Company to the effect that the workman, if injured on his journey, or his representatives, if he should be killed, should be entitled to no compensation even if the injury or death were caused by the negligence of the company."

Since August 1886, all ordinary workmen's tickets issued at London and North Western Company's Booking Offices, and available only by regular passenger trains appointed to call at railway stations, have contained a printed notice on the back stating that they are issued on the express condition that the liability of the company to make compensation for injury or otherwise in respect of a passenger shall be limited to a sum not exceeding 100*l.*

On the other hand, certain coal, iron, and other companies who employ large bodies of men, occasionally in out-of-the-way districts, and require some of these men to be conveyed at hours and to places for which the regular passenger trains are not available, have entered into special contracts with the railway company under which the men are conveyed by workmen's, goods, or mineral trains, as the case may be, at specified times and at exceptionally low fares to and from places situate near the works, in consideration of the railway company being relieved of all liability for accident or loss to such men. The company have only yielded to pressure on the part of the employers in consenting to convey their workmen under extraordinary conditions of this kind, and it would obviously be unfair to attach responsibility to the railway company whilst conferring all the advantages of a special arrangement upon the master.

I enclose specimens of the three descriptions of ticket in use. The dark blue represents the ticket available on the day of issue only, and the light blue ticket for the week, exclusive of Sunday. In both cases the company accept liability for accident up to 100*l.* The red ticket is one of those issued under the entirely exceptional circumstances already described, and it is part of the contract with the employers that in their case the railway company accept no liability.

I am, &c.
(signed) *F. Harrison.*

The Assistant Secretary,
Railway Department, Board of Trade, S.W.

CHEAP WORKMEN'S TICKETS.

COPY of Correspondence between the Board of Trade and certain Railway Companies relative to the Conditions upon which Tickets are issued at Cheap Rates to Workmen as regards the Limitation of the issuing Company's Liability in case of Injury or Death.

(Mr. Burt.)

Ordered, by The House of Commons, *to be Printed.*
21 *August* 1894.

[*Price* 1½*d.*]

316. *Under* 2 *oz.*

SESSION 1894.

REPORT

BY THE

BOARD OF TRADE

OF THEIR

PROCEEDINGS UNDER THE TRAMWAYS ACT, 1870, AND THE GAS AND WATER WORKS FACILITIES ACT, 1870,

DURING THE

SESSION OF 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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Session 1894.

Report by the Board of Trade of their Proceedings under the Tramways Act, 1870, and the Gas and Water Works Facilities Act, 1870, during the Session of 1894.

TRAMWAYS.

Number and list of applications.

The number of applications to the Board of Trade for Provisional Orders under the Tramways Act, 1870, made in December 1893, was eight, viz.:—

Barrow-in-Furness Corporation.
Croydon Corporation.
Croydon (Extensions).
Dudley and Wolverhampton.
Liverpool, Bootle, and Walton-on-the-Hill.
Liverpool Corporation.
South Staffordshire.
West and East Hull.

Objects of applications.

All these applications included powers for the construction of tramways, the aggregate length being 15 miles 65 chains of double line, and 5 miles 29 chains of single line, and the estimated cost being 155,707*l.*

Applications dropped.

The Dudley and Wolverhampton and the West and East Hull applications were not proceeded with by the promoters.

Inspection of routes.

The routes of the proposed lines were in every case inspected by Major-General Hutchinson, R.E., C.B., one of the Inspecting Officers of the Department, whose suggestions were embodied in the Orders granted.

Orders granted.

Provisional Orders were made by the Board of Trade in the six cases proceeded with by the promoters, viz., Barrow-in-Furness Corporation, Croydon Corporation, Croydon (Extensions), Liverpool and Walton-on-the-Hill (the word "Bootle" in the title of the application having been dropped on the excision of the proposed tramways in that borough), Liverpool Corporation, and South Staffordsdire.

Croydon (Extensions) Order. Capital.

The Croydon (Extensions) Provisional Order contained provisions authorising the promoters, being a company incorporated by Act of Parliament, to raise additional capital for the purposes of the undertaking; and, on the understanding that the consent of existing preference shareholders would be produced, a clause was inserted permitting the issue of pre-preference shares or stock. Certain holders having subsequently objected, this clause was struck out.

Lines struck out.

This application proposed also the construction of certain tramways within the Metropolitan area, but the London County Council and the Wandsworth District Board of Works, as Local and Road Authority respectively, withholding their consent, the Board of Trade declined to authorise such lines, and they were accordingly struck out of the Order as made.

Electric Powers protective clause.

An amended form of the clause framed last Session on the recommendation of the Joint Committee on Electric Powers was settled in consultation with the Private Bill authorities of both Houses of Parliament, and was inserted in the Orders to which it was applicable.

Post Office electric clause.

The Postmaster-General desired the insertion of a new form of clause for the protection of the Post Office telegraphs, where electric traction was used, and it was incorporated in the Orders made by the Board of Trade. The clause was subsequently modified, with the consent of the Postmaster-General, in the House of Lords.

a 83130. Wt. 8825.

Confirmation Bills.

Two Bills to confirm the Tramway Provisional Orders were introduced in the House of Lords, the first on May 1st and the second on May 10th.

Select Committee on Water Company's petition.

The Croydon (Extensions) Order in No. 2 Bill was petitioned against by the Lambeth Waterworks Company, who desired the insertion of a clause exempting them from liability for damage arising in the reasonable exercise of their powers or from the accidental bursting of a pipe. The Select Committee, after hearing the parties, refused to insert the clause.

Clause against raising fares on Sundays and public holidays.

In the House of Commons a clause was inserted in the greater number of the Orders forbidding raising fares on Sundays and public holidays. It was omitted from the two Orders affecting Liverpool, owing to the opposition of the Local Authorities.

Both confirming Bills received the Royal Assent on the 17th August.

GAS AND WATER PROVISIONAL ORDERS.

Number of applications.

In December 1893, 15 applications for Provisional Orders under the Gas and Water Works Facilities Act, 1870, were made to the Board of Trade, nine relating to gas, and six to water undertakings.

Power was sought in these Orders to raise 264,500*l.* by shares and 80,000*l.* by loan, of which 142,500*l.* share and 50,000*l.* loan capital related to gas undertakings and 122,000*l.* share and 30,000*l.* loan capital to water undertakings.

The following is a list of the applications:—

Gas.	*Water.*
Bolsover.	Bishop's Waltham.
Broadstairs.	Blandford.
Earby and Thornton.	East Surrey.
Ilford.	Steyning.
Newquay (Cornwall).	Tilehurst, Pangbourne and District.
North Bierley.	West Cheshire.
Uttoxeter.	
Willenhall.	
Worthing.	

Gas.

Objects of applications.

Four applications for Gas Orders were in respect of undertakings already existing without Parliamentary authority, and sought for such authority to maintain and continue the existing works, and to continue the manufacture and supply of gas, viz.:—Bolsover, Earby and Thornton, Newquay (Cornwall), and Uttoxeter. The Bolsover application also sought for authority to construct additional works.

The Broadstairs, Ilford, North Bierley, Willenhall, and Worthing applications related to undertakings already authorised by Parliament. The Broadstairs application was for power to construct additional works for the storage of gas and coke; the Ilford and Worthing applications for power to construct and maintain additional works, and to raise further capital; the North Bierley application for power to extend the borrowing powers of the Company; and the Willenhall application for power to raise additional capital.

Orders granted.

Objections were lodged against some of the applications, but with certain modifications and amendments, the Board of Trade decided to grant all the applications except that relating to Broadstairs.

Local Inquiries.

Numerous objections were lodged against the Broadstairs application, and the Board of Trade directed Major Marindin, R.E., C.M.G., one of the inspecting officers of the Department, to hold a local inquiry and to report to them upon the application. Major Marindin reported that it was essential for the Company to provide additional storage accommodation with as little delay as possible, and that the proposed site was not an unsuitable one. While, however, he held that the objections generally could not be maintained, he was of opinion that in certain cases the property of objectors would be seriously affected by the granting of the Order, and as the Company had failed to show that the site proposed was the only suitable one obtainable, he considered that the objections in question should not be overruled. The Board of Trade accordingly informed the promoters that they would not proceed with the Order so long as those objections remained. The promoters failed to effect an agreement with the objectors and the application was therefore not proceeded with.

The Board of Trade also directed Major Marindin to hold a local inquiry, and report to them with regard to the Newquay (Cornwall) application. Major Marindin reported that it was desirable in the interests of the consumers that the Company should be able to obtain statutory powers, and that he did not consider that the objections were of sufficient weight to justify the refusal of the application. He, therefore, recommended that, subject to certain modifications, the application should be granted. The Board of Trade accordingly granted an order and amended the Company's proposals in various respects.

In the case of the Ilford application Major Marindin was instructed to visit the site of the proposed enlargement of the works, and the various objectors were invited to meet him in support of their objections. Major Marindin reported that the site was a suitable one, and that none of the objectors would be injured by the erection of the proposed works. The Board of Trade accordingly granted the Order, with certain modifications of detail.

Sliding scale.

The sliding scale of price and dividend was adopted in the following orders, the initial price per 1,000 cubic feet being fixed as follows:—

	s.	*d.*	
Bolsover	5	3	
Ilford	4	6	
Uttoxeter	3	2	
Worthing	4	3	the dividend not to be increased above the standard rates of dividend; unless the price charged is 1*d.* or more below 3*s.* 9*d.* per 1,000 cubic feet.

Maximum price.

In three Orders, a maximum price per 1,000 cubic feet was fixed as follows:—

	s.
Earby and Thornton	5
Newquay (Cornwall)	6
North Bierley	4

Power was reserved to the Board of Trade to vary the maximum price, or to substitute a sliding scale, after five years in the Newquay Order, and after three years in the other Orders.

Clauses.

The supply of gas in bulk beyond the limits of supply, subject to the usual limitations, was authorised in the Bolsover, Ilford, Newquay, Uttoxeter, and Worthing Orders.

The Orders contain the usual clauses as to the sale of additional capital by auction or tender, limits of dividend, the creation of insurance and reserve funds, illuminating power, testing of gas, the quantity of land to be taken by agreement, &c. Where necessary the Gas works Clauses Acts, 1847 and 1871 were incorporated.

Confirming Bills.

Two Bills to confirm the Orders were submitted to Parliament, both Bills being introduced into the House of Lords on May 1st. A petition was lodged against the Ilford Order in Bill No. 1 but was subsequently withdrawn. The Bills received the Royal Assent on the 20th July.

Water.

Objects of applications.

The Blandford and Tilehurst applications sought authority to establish new waterworks; the Steyning application sought to authorise the undertakers to supply that town with water derived from the Shoreham and District Waterworks Company; the Bishop's Waltham application was for authority to maintain and continue existing works and to supply water; the East Surrey to authorise the acquisition of further land and the raising of additional capital; and the West Cheshire for an extension of limits.

Orders granted.

The Board of Trade granted a Provisional Order, with such amendments as were considered desirable, in every case except Steyning.

Steyning application.

With regard to the Steyning application, the Board of Trade desired to be satisfied that the Shoreham Company could furnish the requisite supply of water, without detriment to the consumers in their own district. Major Marindin, R.E., C.M.G., was accordingly appointed to hold a local inquiry; and in due course reported that it would be to the advantage of the parish of Steyning to obtain the water in the manner

proposed, and that the supply to the Shoreham Company's consumers would not be in the slightest degree affected.

The Board of Trade thereupon held a conference with the parties interested and settled the terms of a Provisional Order. The Steyning Union Rural Sanitary Authority strongly objected, however, to the Shoreham Company being authorised to supply water to the undertakers of the Steyning Order, unless an inquiry was held into the present supply of that Company in their own district. It was alleged that improvement in such supply was much more important than the proposed supply to Steyning, which was already well supplied with water for domestic purposes. This protest was joined in by the New Shoreham Local Board, and on the 5th April the Board of Trade informed the parties that the Order would not be proceeded with. On the 18th April a letter was received from the Steyning Authority withdrawing their opposition; but by this time it was too late to comply with the requirements of the Gas and Water Works Facilities Act, 1870, and the Order could not, therefore, be granted.

Confirmation Bill.

A Bill to confirm the Water Provisional Orders was introduced in the House of Lords on the 1st May. It passed through both Houses without opposition and received the Royal Assent on the 20th July.

Board of Trade,
August 1894.

FRANCIS J. S. HOPWOOD.

TABLE.

The following table shows the number of Orders made by the Board of Trade under the Tramways Act, 1870, and the Gas and Water Works Facilities Act, 1870, from the passing of those Acts down to the present time :—

Year.	Tramway Orders.			Gas and Water Orders.			Fees received with applications.
	Applied for.	Made by Board of Trade.	Confirmed by Parliament.	Applied for.	Made by Board of Trade.	Confirmed by Parliament.	
							£
1871	26	12	*a* 4	23	19	19	1,715
1872	18	16	*b* 10	18	17	17	1,260
1873	15	9	*c* 17	14	14	14	1,015
1874	10	6	6	16	14	14	910
1875	2	2	2	12	10	10	490
1876	7	6	6	23	22	22	1,050
1877	12	8	8	16	14	13	980
1878	25	17	15	22	20	20	1,645
1879	32	21	21	24	24	24	1,960
1880	35	28	27	15	15	15	1,750
1881	39	27	27	19	17	17	2,030
1882	27	*d* 23	21	12	11	11	1,365
1883	30	*d* 24	22	16	16	16	1,610
1884	24	18	18	17	17	17	1,435
1885	16	13	13	17	*e* 15	14	1,155
1886	20	14	*f* 13	21	21	*f* 20	1,435
1887	17	12	12	14	13	13	1,015
1888	14	13	13	24	22	22	1,330
1889	7	6	6	14	14	14	735
1890	13	11	11	22	22	*g* 21	1,225
1891	7	6	*h* 5	14	13	13	735
1892	10	8	*j* 4	15	*i* 13	11	875
1893	7	4	*k* 6	15	15	15	770
1894	8	6	6	15	13	13	805
Total	421	310	293	418	391	385	29,295

a. Eight others were suspended.
b. Four others were suspended and two withdrawn.
c. Including eight suspended in 1871 and 1872.
d. One was afterwards struck out of the Bill by direction of the Board of Trade.
e. One was not advertised in time, and was therefore not introduced into the Confirmation Bill.
f. One Tramway Order and one Gas Order were withdrawn, but confirmed on a fresh application in the session 1887.
g. One was dropped by the Promoters, and was therefore not introduced into a Confirmation Bill.
h. One Order was struck out of the Confirmation Bill at the request of the Promoters.
i. In two instances the Promoters failed to publish the Orders before the prescribed date.
j. One Order was dropped by the Promoters, and three others were in a Bill which was carried over to a future session by special resolution.
k. The three Orders referred to in note *j* were confirmed this year. One of the Orders granted this Session was not submitted to Parliament for confirmation.

MEMORANDUM stating the Nature of the PROPOSALS contained in the PROVISIONAL ORDERS included in the TRAMWAYS ORDERS CONFIRMATION (No. 1) BILL.

1. *Barrow-in-Furness Corporation.*

Authorising the Corporation of Barrow-in-Furness to construct additional Tramways in the Borough, with provisions as to working the lines.

2. *Liverpool and Walton-on-the-Hill.*

Authorising the Liverpool United Tramways and Omnibus Company to construct additional Tramways in the parish and township of Walton-on-the-Hill, with power to the Local Authority to be substituted as Promoters, and provisions as to working the lines.

3. *Liverpool Corporation.*

Authorising the Corporation of Liverpool to construct additional Tramways in the City, with provisions as to leasing the lines, and increasing the borrowing powers of the Corporation by 5,100*l.*

Board of Trade,
7, Whitehall Gardens,
June 1894.

Courtenay Boyle,
Secretary.

TRAMWAYS ORDERS CONFIRMATION (No. 1) BILL. [H.L.]

MEMORANDUM stating the Nature of the PROPOSALS contained in the PROVISIONAL ORDERS included in the TRAMWAYS ORDERS CONFIRMATION (No. 1) BILL.

(Presented by Her Majesty's Command.)

Ordered, by The House of Commons, *to be Printed,*
6 *July* 1894.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY EYRE AND SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

And to be purchased, either directly or through any Bookseller, from
EYRE and SPOTTISWOODE, East Harding-street, Fleet-street, E.C.,
and 32, Abingdon-street, Westminster, S.W.; or
JOHN MENZIES & Co., 12, Hanover-street, Edinburgh, and
90, West Nile-street, Glasgow; or
HODGES, FIGGIS, & Co., LIMITED, 104, Grafton-street, Dublin.

[*Price* ½ *d.*]

206.

MEMORANDUM stating the Nature of the PROPOSALS contained in the PROVISIONAL ORDERS included in the TRAMWAYS ORDERS CONFIRMATION (No. 2) BILL.

1. *Croydon Corporation.*

Authorising the Corporation of Croydon to construct Tramways in the County Borough, with provisions as to working the lines, and increasing the borrowing powers of the Corporation by 1,750*l.*

2. *Croydon (Extensions).*

Authorising the Croydon Tramways Company to construct additional Tramways in the County Borough of Croydon, and increasing the authorised share capital by 16,000*l.* and the borrowing powers by 4,000*l.*

3. *South Staffordshire.*

Authorising the South Staffordshire Tramways Company to construct Tramways in the Borough of West Bromwich and the Parish of Handsworth, with provisions as to working the lines.

Board of Trade,
7, Whitehall Gardens,
June 1894.

Courtenay Boyle,
Secretary.

TRAMWAYS ORDERS CONFIRMATION (No. 2) BILL. [H.L.]

MEMORANDUM stating the Nature of the PROPOSALS contained in the PROVISIONAL ORDERS included in the TRAMWAYS ORDERS CONFIRMATION (No. 2) BILL.

(Presented by Her Majesty's Command.)

Ordered, by The House of Commons, *to be Printed,*
10 *July* 1894.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY EYRE AND SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

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EYRE and SPOTTISWOODE, East Harding-street, Fleet-street, E.C.,
and 32, Abingdon-street, Westminster, S.W.; or
JOHN MENZIES & Co., 12, Hanover-street, Edinburgh, and
90, West Nile-street, Glasgow; or
HODGES, FIGGIS, & Co., LIMITED, 104. Grafton-street, Dublin.

[*Price* ½ *d.*]

210.

TRAMWAYS (STREET AND ROAD).

RETURN to an Order of the Honourable The House of Commons, dated 4 July 1894;—*for*,

RETURN "of STREET and ROAD TRAMWAYS Authorised by Parliament, showing the Amount of CAPITAL Authorised, Paid up, and Expended, the Length of TRAMWAY Authorised, and the Length Open for the Public Conveyance of PASSENGERS, down to the 30th day of June 1894; the GROSS RECEIPTS, WORKING EXPENDITURE, and NET RECEIPTS; the Number of PASSENGERS Conveyed, and the Number of MILES Run by Cars, during the Year ending the 30th day of June 1894; together with the Number of HORSES, ENGINES, and Cars at that Date (in continuation of Parliamentary Paper, No. 400, of Session 1893-94)."

(*Mr. Burt.*)

Ordered, by The House of Commons, *to be Printed*,
8 *August* 1894.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY EYRE AND SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

And to be purchased, either directly or through any Bookseller, from
EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.,
and 32, ABINGDON STREET, WESTMINSTER, S.W.; or
JOHN MENZIES & Co., 12, HANOVER STREET, EDINBURGH, and
90, WEST NILE STREET, GLASGOW; or
HODGES, FIGGIS, & Co., LIMITED, 104, GRAFTON STREET, DUBLIN.

270.

COMPARATIVE TABLE. - - - - - - - -

STATEMENT showing the Amount of CAPITAL Authorised, Paid up, and Expended for TRAMWAYS in each LINE Open, the Number of PASSENGERS Carried, the GROSS and NET RECEIPTS,

	ENGLAND AND WALES. (For Years ended 30th June.)							SCOTLAND. (For Years ended 30th June.)						
	1878.	1882.	1886.	1890.	1892.	1893.	1894.	1878.	1882.	1886.	1890.	1892.	1893.	*1894.
Capital Authorised:	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
By Shares - - -	3,310,512	6,652,480	10,396,467	10,148,229	9,235,920	8,899,196	8,835,191	655,000	825,027	972,486	900,725	852,903	922,853	758,441
By Loans and Debentures.	1,347,121	3,160,784	4,031,442	4,250,463	4,575,665	4,564,681	4,824,311	534,462	646,762	705,927	786,498	795,753	813,903	1,409,093
TOTAL - - - £.	4,657,633	9,813,264	14,427,909	14,398,692	13,811,585	13,463,877	13,659,502	1,189,462	1,471,789	1,678,413	1,687,223	1,648,656	1,736,756	2,167,534
Capital Paid up:														
Share - - - -	2,403,346	4,566,971	7,536,079	7,758,791	7,609,513	7,595,258	7,469,282	310,790	572,054	642,619	743,284	719,615	714,565	546,313
Loan and Debenture -	587,102	1,953,988	2,682,297	3,235,550	3,479,426	3,557,922	3,716,912	302,716	439,232	477,126	531,985	529,114	574,696	1,094,376
TOTAL - - - £.	2,990,448	6,520,959	10,218,376	10,994,341	11,088,939	11,153,180	11,186,194	613,506	1,011,286	1,119,745	1,275,269	1,248,729	1,289,261	1,640,689
Total Capital Expended -	3,121,268	6,304,509	10,345,879	11,136,027	11,235,074	11,418,828	11,454,363	657,943	1,038,852	1,157,559	1,366,938	1,359,234	1,399,355	1,628,672
	Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*
Length of Line open for Public Traffic.	194	444	706	753	750	761	772	43	64	73	84	84	86	88
	No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Number of Horses belonging to the Companies.	6,269	13,741	19,388	21,681	23,306	23,653	24,007	2,122	3,062	3,499	4,126	4,284	4,356	4,241
Number of Locomotive Engines belonging to the Companies.	6	53	422	534	492	522	532	8	10	17	19	20	20	10
Number of Cars belonging to the Companies.	802	1,794	2,772	3,030	3,239	3,327	3,393	210	343	384	423	426	429	429
Total Number of Passengers carried.	89,442,108	187,875,779	302,790,839	418,399,936	463,137,946	476,928,832	501,494,739	47,680,256	56,137,402	59,528,415	76,008,545	82,145,667	82,095,160	74,623,088
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
Gross Receipts - - -	745,483	1,516,845	2,110,918	2,573,535	2,841,325	2,904,026	2,960,198	253,011	314,205	335,900	417,350	448,150	444,438	391,491
Working Expenses - -	579,471	1,225,906	1,639,390	1,932,444	2,300,223	2,298,573	2,336,860	212,960	216,902	243,693	296,493	354,879	347,482	324,170
Net Receipts - - -	166,012	290,939	471,528	641,091	541,102	605,453	623,338	40,051	97,303	92,207	120,857	93,271	96,956	67,321

Note.—The figures relating to capital have, in recent years, been considerably affected by the transfer of old undertakings to new Companies, with reduced capital, and by certain other re-arrangements, in addition to the failure to furnish Returns in some cases.

* The figures relating to Scotland have been disturbed this year (1894) by the transfer of the ownership or working of tramways in Edinburgh, Glasgow, and Govan, from the Companies to the Local Authorities.

COMPARATIVE TABLE.

Division of the UNITED KINGDOM on the 30th June in certain Years from 1878 to 1894; also the LENGTH of and the WORKING EXPENDITURE in each of the same Years.

IRELAND. (For Years ended 30th June.)							UNITED KINGDOM. (For Years ended 30th June.)							
1878.	1882.	1886.	1890.	1892.	1893.	1894.	1878.	1882.	1886.	1890.	1892.	1893.	1894.	
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	Capital Authorised :
591,637	1,047,500	1,221,500	1,377,500	1,386,500	1,378,000	1,528,000	4,557,149	8,525,007	12,590,453	12,426,454	11,475,323	11,200,049	11,121,632	By Shares.
147,379	253,490	312,666	339,666	354,499	350,499	387,999	2,028,962	4,061,036	5,050,035	5,376,627	5,725,917	5,729,083	6,621,403	By Loans and Debentures.
739,016	1,300,990	1,534,166	1,717,166	1,740,999	1,728,499	1,915,999	6,586,111	12,586,043	17,640,488	17,803,081	17,201,240	16,929,132	17,743,035	- - - TOTAL.
														Capital Paid up :
403,010	811,668	925,982	1,080,090	1,080,621	1,091,487	1,096,499	3,117,146	5,950,693	9,104,680	9,582,165	9,409,749	9,401,310	9,112,094	Share.
28,500	85,390	125,401	152,326	152,711	174,421	189,191	918,318	2,478,610	3,284,824	3,919,861	4,161,251	4,307,039	5,000,479	Loan and Debenture.
431,510	897,058	1,051,383	1,232,416	1,233,332	1,265,908	1,285,690	4,035,464	8,429,303	12,389,504	13,502,026	13,571,000	13,708,349	14,112,573	- - - TOTAL.
428,139	918,424	1,069,603	1,232,804	1,275,926	1,285,969	1,305,663	4,207,350	8,261,815	12,573,041	13,735,769	13,870,234	14,104,152	14,388,698	Total Capital Expended.
Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	
32	56	86	111	112	113	115	269	564	865	948	946	960	975	Length of Line open for Public Traffic.
No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	
831	1,327	1,643	1,912	2,109	2,216	2,280	9,222	18,130	24,535	27,719	29,699	30,225	30,528	Number of Horses belonging to the Companies.
-	4	13	22	22	21	22	14	76	452	575	534	563	564	Number of Locomotive Engines belonging to the Companies.
112	215	284	348	355	342	357	1,124	2,352	3,440	3,801	4,020	4,098	4,179	Number of Cars belonging to the Companies.
8,878,859	13,746,879	21,838,270	31,960,847	36,394,933	39,265,517	40,855,003	146,001,223	257,760,060	384,157,524	526,369,328	581,678,546	598,289,509	616,972,830	Total Number of Passengers carried.
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
100,777	139,300	183,520	223,858	241,956	257,631	264,148	1,099,271	1,970,350	2,630,338	3,214,743	3,531,431	3,606,095	3,615,837	Gross Receipts.
75,884	112,985	138,473	173,863	198,254	191,391	198,026	868,315	1,555,793	2,021,556	2,402,800	2,853,356	2,837,446	2,859,056	Working Expenses.
24,893	26,315	45,047	49,995	43,702	66,240	66,122	230,956	414,557	608,782	811,943	678,075	768,649	756,781	Net Receipts.

	Capital Expenditure on Lines and Works Open for Traffic.	Total Expenditure on Capital Account.	Length Open for Traffic.			Number of Undertakings.
			Double.	Single.	Total.	
	£.	£.	M. CH.	M. CH.	M. CH.	
TRAMWAYS belonging to Local Authorities - -	* 2,676,915	* 3,887,534	181 39	134 26	315 65	37
TRAMWAYS belonging to *other than* Local Authorities -	† 8,105,765	† 10,501,164	254 47	405 26	659 73	116
TOTAL, UNITED KINGDOM - - -	10,782,680	14,388,698	436 6	539 52	975 58	153

* Under the Tramways Act, 1870, Local Authorities are not authorised to work their own Tramways, and these figures include, herefore, in several cases, the amounts expended by their Lessees on buildings and equipment for working the lines. *(By pecial statutory powers the Corporations of Blackpool, Huddersfield, and Plymouth are themselves working their Tramways.)*

† These figures include cost of buildings and equipment in respect of certain Local Authorities' lines worked in conjunction with ther lines.

Note.—In the following pages where the words "Corporation," or "Local Board," occur in the name of the Tramways, they imply hat the lines belong to the Local Authority, though not worked by them, except in the cases mentioned above.

RETURN of STREET and ROAD TRAMWAYS Authorised by Parliament, showing the Amount Length Open for the Public Conveyance of PASSENGERS, down to the 30th June 1894; the PASSENGERS Conveyed, and the Number of MILES Run by Cars, during the Year ended

PART I. - - - - - - - -

RETURN of STREET and ROAD TRAMWAYS Authorised by Parliament, showing the Amount the Length Open for the Public Conveyance

NAME OF TRAMWAY, AND GAUGE. • Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES:		£.	£.	£.	£.	£.	£.	
Accrington Corporation (with Haslingden and Rawtenstall Extension.) * 4 ft.	45 & 46 Vict. c. 118 - 50 & 51 Vict. c. 56 -	Corporation Return: - -	45,000	45,000	- -	38,092	38,092	1
		Company's Return: 60,000	7,500	67,500	52,680	6,000	58,680	2
Barrow-in-Furness * - - - - 4 ft.	47 & 48 Vict. c. 107 - 51 & 52 Vict. c. 64.	50,000	19,500	69,500	45,180	16,002	61,182	3
Bath - - - - - - - - 4 ft.	43 & 44 Vict. c. 172 -	No Return received.		—	—	—	—	4
Birkdale and Southport * - - - 4 ft. 8½ ins.	43 & 44 Vict. c. 172 - 45 & 46 Vict. c. 138.	80,000	30,000	110,000	5,810	8,600	14,410	5
Birkenhead Corporation (formerly Birkenhead). 4 ft. 8½ ins.	35 & 36 Vict. c. 127 - 36 & 37 Vict. c. 239. 40 & 41 Vict. c. 187. 42 & 43 Vict. c. 186.	- -	8,000	8,000	- -	7,987	7,987	6
Birmingham and Aston * - - - 3 ft. 6 ins.	43 & 44 Vict. c. 173 - 45 & 46 Vict. c. 101. 47 & 48 Vict. c. 112.	100,000	13,000	113,000	60,000	(Paid off.)	60,000	7
Birmingham and Midland * - - 3 ft. 6 ins.	(Birmingham and Western Districts Orders): 44 & 45 Vict. c 163. 45 & 46 Vict. c. 101. 46 & 47 Vict. c. 47. 51 & 52 Vict. c. 64. 55 & 56 Vict. c. 194.	119,680 (b)	34,350 (b)	154,030 (b)	119,680	34,350	154,030	8
Birmingham Central * - - - - 3 ft. 6 ins.	45 & 46 Vict. c. 101 (Birmingham and Suburban Order). 46 & 47 Vict. c. 47. 47 & 48 Vict. c. 107. 48 & 49 Vict. c. 103. 50 & 51 Vict. c. 196.	500,000	162,572	662,572	487,728	154,300	642,028	9
Birmingham Corporation * - - - 3 ft. 6 ins.	35 & 36 Vict. c. 157 - 37 & 38 Vict. c. 183. 43 & 44 Vict. c. 173 (Birmingham and Aston Order). 44 & 45 Vict. c. 163 (Birmingham and Western Districts Order). 45 & 46 Vict. c. 101 (Birmingham and Aston and Birmingham and Suburban Orders). 46 & 47 Vict. c. 47 (Birmingham and Western Districts and North Birmingham Orders). 47 & 48 Vict. c. 107 (North Birmingham and South Birmingham Orders). 48 & 49 Vict. c. 103 (Birmingham Central and Birmingham Corporation Orders).	- -	(c) 169,656	169,656	- -	169,656	169,656	10
Blackburn and Over Darwen * - - 4 ft.	42 & 43 Vict. c. 225 -	50,000	12,500	62,500	47,000	2,138	49,138	11

(a) Exclusive of leased lines belonging to Birmingham Corporation. (b) Amount paid up only. (c) Amount raised.

of CAPITAL Authorised, Paid up, and Expended, the Length of TRAMWAY Authorised, and the GROSS RECEIPTS, WORKING EXPENDITURE, and NET RECEIPTS; the Number of 30th June 1894; together with the Number of HORSES, ENGINES, and CARS at that Date.

PART I.

of CAPITAL Authorised, Paid up, and Expended, the Length of TRAMWAY Authorised, and of PASSENGERS, down to the 30th June 1894.

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	36,292	- -	- -	- -	- -	1,800	- -	38,092	1 32	4 46	5 78	1 25	4 6	5 31
2	36,159	- -	- -	12,710	3,232	- -	5,482	57,583	0 57	3 28	4 5	0 57	3 28	4 5
3	51,326	- -	- -	5,914	2,026	1,651	4,724	65 641	1 45	5 17	6 62	1 30	4 10	5 46
4	—	—	—	—	—	—	—	—	-	-	-	-	-	-
5	20,190	- -	453	- -	447	- -	201	21,291	0 71	4 45	5 36	0 58	3 13	3 7
6	7,586	- -	- -	- -	- -	38	147	7,771	4 46	2 25	6 71	4 46	2 25	6 71
7	40,647	- -	296	15,554	2,409	6,074	2,516	67,496	1 14	2 52	(a) 3 66	1 14	2 52	(a) 2 66
8	123,294	- -	- -	19,588	5,807	9,105	2,920	160,714	2 4	6 76	(a) 9 0	2 4	6 76	(a) 9 0
9	347,790	- -	28,479	68,666	58,856	141,085	14,684	659,560	5 70	9 29	(a) 15 19	3 9	5 5	(a) 8 14
10	171,512	- -	- -	- -	- -	749	- -	172,261	14 26	6 65	21 11	13 51	5 75	19 46
11	30,898	- -	- -	7,771	2,906	5,502	2,061	49,138	0 40	4 55	5 15	0 40	4 55	5 15

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES—*continued.*		£.	£.	£.	£.	£.	£.	
Blackburn Corporation (with Church and Oswaldtwistle Extension). * 4 ft.	45 & 46 Vict. c. 243 50 & 51 Vict. c. 46. 51 & 52 Vict. c. 11. 54 & 55 Vict. c. 148 (Church and Oswaldtwistle Order).	81,100	20,000	101,100	81,100	20,000	101,100	1
Blackpool Corporation* 4 ft. 8½ ins.	47 & 48 Vict. c. 112 56 & 57 Vict. c. 86. 56 & 57 Vict. c. 193.	- -	130,750	130,750	- -	31,433	31,433	2
Blackpool, St. Anne's and Lytham * 4 ft. 8½ ins.	56 & 57 Vict. c. 216	100,000	25,000	125,000	- -	- -	- -	3
Bolton and Suburban * 4 ft. 8½ ins.	41 & 42 Vict. c. 231 51 & 52 Vict. c. 95. 54 & 55 Vict. c. 13. 56 Vict. c. 55.	Bolton Corporation Return:						
		—	90,000	90,000	- -	73,000	73,000	4
		Astley Bridge Local Board Return:						
		—	9,500	9,500	-	9,078	9,078	5
		Farnworth Local Board Return:						
		—	13,000	13,000	- -	12,200	12,200	6
		Kearsley Local Board Return:						
		—	15,000	15,000	- -	1,910	1,910	7
Bootle Corporation * 4 ft. 8½ ins.	44 & 45 Vict. c. 105 47 & 48 Vict. c. 112. 55 & 56 Vict. c. 134.	- -	46,500	46,500	- -	38,749	38,749	8
Bradford Corporation * 4 ft.	43 & 44 Vict. c. 173 46 & 47 Vict. c. 131. 50 Vict. c. 21. 51 & 52 Vict. c. 64. 53 & 54 Vict. c. 181.	Corporation Return:						
		—	176,100	176,100	- -	94,540	94,540	9
		(*b*) Bradford Tramways and Omnibus Company's Return:						
		80,000	15,000	95,000	33,600	11,300	44,900	10
		Bradford and Shelf Tramway Company's Return:						
		20,000	10,000	20,000	13,500	- -	13,500	11
Brighton and Shoreham * 3 ft. 6 ins.	45 & 46 Vict. c. 89	10,000	- -	10,000	9,170	- -	9,170	12
Bristol * 4 ft. 8½ ins.	35 & 36 Vict. c. 158 38 & 39 Vict. c. 167. 39 & 40 Vict. c. 150. 40 & 41 Vict. c. 124. 42 & 43 Vict. c. 193. 43 & 44 Vict. c. 172. 44 & 45 Vict. c. 164. 45 & 46 Vict. c. 138. 50 & 51 Vict. c. 196. 54 & 55 Vict. c. 162.	250,000	68,333	318,333	205,000	63,495	268,495	13
Burnley and District * 4 ft. 8½ ins.	42 & 43 Vict. c. 193 45 & 46 Vict. c. 138. 50 & 51 Vict. c. 196.	100,000	25,000	125,000	46,507	23,250	69,757	14
Bury, Rochdale, and Oldham * 3 ft. 6 ins. and 4 ft. 8½ ins.	44 & 45 Vict. c. 164 (Bury and District and Rochdale Orders). 45 & 46 Vict. c. 101. 47 & 48 Vict. c. 164. 48 & 49 Vict. c. 72. 50 & 51 Vict. c. 9.	42,000	101,320	143,320	42,000	101,320	143,320	15
Cambridge Street 4 ft.	42 & 43 Vict. c. 165 43 & 44 Vict. c. 172.	20,000	5,000	25,000	20,000	5,000	25,000	16
Cardiff 4 ft. 8½ ins.	34 & 35 Vict. c. 189 36 & 37 Vict. c. 197. 41 & 42 Vict. c. 163. 47 & 48 Vict. c. 112. 48 & 49 Vict. c. 66.	(*c*) 151,634	- -	151,634	(*c*) 151,634	- -	151,634	17
Cardiff District and Penarth Harbour * 4 ft. 8½ ins.	43 & 44 Vict. c. 172 48 & 49 Vict. c. 66.	50,000	- -	50,000	20,355	1,600	21,955	18
Chester 4 ft. 8½ ins.	41 & 42 Vict. c. 174	32,000	8,000	40,000	31,820	5,250	37,070	19
Chesterfield 4 ft. 8½ ins.	42 & 43 Vict. c. 193	No Return received.		—	—	—	—	20
Coventry and District* 3 ft. 6 ins.	43 & 44 Vict. c. 185 45 & 46 Vict. c. 120. 46 & 47 Vict. c. 140. 47 & 48 Vict. c. 220. 50 & 51 Vict. c. 86.	25,000	15,000	40,000	- -	- -	- -	21
Croydon * 4 ft. 8½ ins.	41 & 42 Vict. c. 224 43 & 44 Vict. c. 172. 45 & 46 Vict. c. 156. 46 & 47 Vict. c. 174 52 & 53 Vict. c. 106.	47,000	21,000	68,000	41,075	20,720	61,795	22
Derby * 4 ft.	42 & 43 Vict. c. 193	55,000	- -	55,000	52,930	- -	52,930	23

(*a*) Fixed engines, &c.
(*b*) This company has also other undertakings which, with the tramways, are amalgamated in its books. Therefore, where actual figures cannot be supplied, approximate estimates are given.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	72,450	- -	2,100	11,900	5,640	6,648	4,463	103,201	1 0	7 40	8 40	1 0	7 40	8 40
2	24,355	- -	- -	(a) 2,635	1,693	686	2,064	31,433	2 66	4 66	7 52	0 49	1 30	1 79
3	- -	- -	- -	- -	- -	- -	- -	- -	2 66	5 38	8 24	-	-	-
4	67,864	- -	- -	- -	- -	2,697	2,566	73,227	5 13	7 52	12 65	5 13	7 52	12 65
5	8,839	- -	- -	- -	- -	239	- -	9,078	0 27	1 13	1 40	0 27	1 13	1 40
6	7,314	- -	- -	- -	- -	503	- -	7,817	0 67	1 19	2 6	0 62	0 10	0 72
7	1,406	- -	- -	- -	- -	503	- -	1,909	0 9	0 16	0 25	0 9	0 16	0 25
8	38,749	- -	- -	- -	- -	380	- -	39,129	2 66	1 34	4 20	2 51	0 49	3 20
9	88,263	- -	- -	- -	- -	2,712	- -	90,975						
10	17,134	213	1,800	25,086	9,520	550	595	54,898	6 48	8 2	14 50	6 48	8 2	14 50
11	4,190	- -	- -	12,966	3,517	- -	1,168	21,841						
12	7,314	- -	990	- -	852	- -	- -	9,156	0 65	3 72	4 57	0 61	3 61	4 42
13	239,250	1,465	24,060	- -	Included in amount in first Column.			264,775	9 41	6 78	16 39	8 3	5 14	14 7
14	58,084	27	- -	9,745	3,045	373	- -	71,274	1 62	6 73	8 55	1 19	5 73	7 13
15	107,152	- -	- -	24,959	Included in previous Column.	13,214	1,223	146,548	5 75	21 5	27 0	5 75	21 5	27 0
16	25,000	- -	-	Details of Capital Expenditure not given			- -	25,000	0 54	2 0	2 54	0 54	2 0	2 54
17	(c) 151,634	- -	- -	- -	- -	- -	- -	151,634	2 79	2 67	5 66	2 79	2 67	5 66
18	15,650	- -	- -	- -	- -	688	6,340	22,678	0 33	2 6	2 39	0 31	2 2	2 33
19	31,470	- -	2,475	- -	2,086	- -	289	36,320	0 79	1 31	2 30	0 79	1 31	2 30
20	—	—	—	—	—	—	—	—	-	-	-	-	-	-
21	- -	(d) 30,500	- -	- -	4,000	1,000	4,000	39,500	-	6 20	6 20	-	-	-
22	68,000	- -	-	Undertaking purchased for lump sum			- -	68,000	1 30	9 33	10 63	1 30	5 33	6 63
23	52,985	- -	-	Details of capital expenditure not given			- -	52,985	1 27	3 37	4 64	1 27	3 37	4 64

(c) Includes amount expended on the purchase of the omnibus business of S. Andrews and Son.
(d) Line being refitted for electric working.

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES—*continued.*		£.	£.	£.	£	£.	£.	
Dewsbury, Batley, and Birstal* - - 4 ft. 8½ ins.	36 & 37 Vict. c. 197 42 & 43 Vict. c. 193.	50,000	- -	50,000	38,088	5,000	43,088	1
Drypool and Marfleet* - - - - 4 ft. 8½ ins.	49 & 50 Vict. c. 21 53 & 54 Vict. c. 181. 55 & 56 Vict. c. 194.	12,000	30,000	42,000	9,590	4,025	13,615	2
Dudley and Stourbridge* - - - - 3 ft. 6 ins.	44 & 45 Vict. c. 163 48 & 49 Vict. c. 103. 50 Vict. c. 10.	100,000	- -	100,000	58,945	- -	58,945	3
Dudley and Wolverhampton (formerly Dudley, Sedgley, and Wolverhampton)*. 4 ft. 8½ ins.	43 & 44 Vict. c. 172 47 & 48 Vict. c. 112.	23,000	23,000	46,000	- -	- -	- -	4
Eccles Corporation - - - - - 4 ft. 8½ ins.	40 & 41 Vict. c. 124	- -	17,000	17,000	- -	17,000	17,000	5
Exeter - - - - - - - - - 3 ft. 6 ins.	44 & 45 Vict. c. 130	7,500	- -	(a) 7,500	7,500	- -	(a) 7,500	6
Folkestone, Sandgate, and Hythe (belonging to South Eastern Railway Company)* 4 ft. 8½ in.	47 & 48 Vict. c. 166 49 & 50 Vict. c. 118. 51 & 52 Vict. c. 28. 52 & 53 Vict. c. 88. 54 & 55 Vict. c. 29. 55 & 56 Vict. c. 89. 56 & 57 Vict. c. 100.	22,000	6,050	28,050	(f) 26,485	- -	26,485	7
Gateshead and District* - - - 4 ft. 8½ ins.	43 & 44 Vict. c. 164 45 & 46 Vict. c. 145. 46 & 47 Vict. c. 141.	80,000	20,000	100,000	80,000	20,000	100,000	8
Gloucester - - - - - - - 4 ft.	41 & 42 Vict. c. 131	16,000	8,000	24,000	16,000	- -	16,000	9
Gosport, Alverstoke, and Bury Cross* 3 ft.	52 & 53 Vict. c. 111	10,000	- -	10,000	435	- -	435	10
Gravesend, Rosherville, and Northfleet.* 3 ft. 6 ins.	44 & 45 Vict. c. 105 47 & 48 Vict. c. 102.	10,000	(b) 6,200	16,200	7,201	6,200	(c) 13,401	11
Great Grimsby - - - - - 4 ft. 8½ ins.	42 & 43 Vict. c. 127 50 Vict. c. 10.	35,000	8,750	43,750	35,000	- -	35,000	12
Harrow Road and Paddington - - 4 ft. 8½ ins.	49 & 50 Vict. c. 104 54 & 55 Vict. c. 168. 56 Vict. c. 41.	90,000	15,000	105,000	63,150	13,800	76,950	13
Hartlepools* - - - - - - 3 ft. 6 ins.	46 & 47 Vict. c. 131 47 & 48 Vict. c. 102. 51 & 52 Vict. c. 95.	No Return received. (Line closed).			—	—	—	14
Highgate Hill* - - - - - - 3 ft. 6 ins.	45 & 46 Vict. c. 70	No Return received. (Line closed).			—	—	—	15
Huddersfield Corporation* - - - 4 ft. 8½ ins.	43 & 44 Vict. c. 99 45 & 46 Vict. c. 236. 53 & 54 Vict. c. 55.	- -	140,500	140,500	- -	139,500	139,500	16
Hull Street - - - - - - - 4 ft. 8½ ins.	35 & 36 Vict. c. 158 38 & 39 Vict. c. 159. 40 & 41 Vict. c. 124. 41 Vict. c. 54.	No Return received.		—	—	—	—	17
Ipswich* - - - - - - - 3 ft. 6 ins.	42 & 43 Vict. c. 193 43 & 44 Vict. c. 172. 44 & 45 Vict. c. 109. 45 & 46 Vict. c. 51. 53 & 54 Vict. c. 66.	40,000	10,000	50,000	32,930	- -	32,930	18
Keighley* - - - - - - - 4 ft.	51 & 52 Vict. c. 122	23,000	- -	23,000	12,351	- -	12,351	19
Lancaster and District* - - - 4 ft. 8½ in.	52 & 53 Vict. c. 110	40,000	- -	40,000	25,018	21,502	46,520	20
Lea Bridge, Leyton, and Walthamstow 4 ft. 8½ ins.	44 & 45 Vict. c. 170 47 & 48 Vict. c. 244. 52 & 53 Vict. c. 158. 53 & 54 Vict. c. 182.	40,000	10,000	50,000	39,998	5,000	44,998	21
Leamington and Warwick - - - - 4 ft. 8½ ins.	42 & 43 Vict. c. 193 45 & 46 Vict. c. 138.	25,000	(b) 7,900	32,900	15,850	7,900	23,750	22
Leeds Corporation* (e) - - - 4 ft. 8½ ins.	34 & 35 Vict. c. 189 35 & 36 Vict. c. 174. 40 & 41 Vict. c. 169. 44 & 45 Vict. c. 150. 51 & 52 Vict. c. 64.	Lines acquired by Corporation from the Leeds Tramways Company:						
		- -	130,000	130,000	- -	128,132	128,132	23
		Roundhay Park line made by Corporation:						
		- -	21,000	21,000	- -	21,000	21,000	24
Leicester - - - - - - - 4 ft. 8½ ins.	36 & 37 Vict. c. 197 40 & 41 Vict. c. 170. 47 & 48 Vict. c. 80.	100,000	24,000	124,000	100,000	23,500	123,500	25

(a) Amount expended by present owners.
(b) Amount raised only.
(c) The nominal capital was by Special Resolution and Order of Court, 15th July 1890, reduced to 10,000*l.*
(d) No Return having been received, the Return of last year is repeated.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	37,405	- -	25	6,200	2,680	2,281	- -	48,591	0 50	3 58	4 28	0 37	3 66	4 23
2	7,869	- -	- -	4,227	2,040	2,125	222	16,483	0 18	1 12	1 30	0 17	1 10	1 27
3	46,309	- -	- -	7,118	2,105	4,600	496	60,628	0 44	4 48	5 12	0 44	4 48	5 12
4	- -	- -	Particulars not furnished		- -	- -	- -	- -	0 36	5 26	5 62	0 36	5 26	5 62
5	15,234	- -	- -	- -	- -	997	- -	16,231	0 52	1 44	2 16	0 52	1 44	2 16
6	7,500	- -	- -	No details are given		- -	- -	7,500	0 26	2 4	2 30	0 26	2 4	2 30
7	16,267	- -	776	- -	387	9,055	- -	26,485	0 8	3 22	3 30	0 8	3 22	3 30
8	66,000	-	- -	13,700	4,725	11,600	3,406	99,431	1 55	4 65	6 40	1 55	4 65	6 40
9	16,000	- -	-	Undertaking purchased for a lump sum		- -		16,000	0 43	2 36	2 79	0 43	2 33	2 76
10	- -	- -	- -	- -	- -	- -	- -	- -	0 29	2 6	2 35	-	-	-
11	12,565	- -	- -	- -	888	3,999	3,246	20,698	0 17	2 3	2 20	0 17	2 3	2 20
12	32,241	- -	2,535	- -	2,090	- -	- -	36,866	1 12	3 66	4 78	1 4	3 63	4 67
13	53,705	4,545	3,507	- -	3,187	8,107	2,826	80,877	6 6	3 9	9 15	1 57	1 11	2 68
14	—	—	—	—	—	—	—	—	-	-	-	-	-	-
15	—	—	—	—	—	—	—	—	-	-	-	-	-	-
16	107,174	- -	- -	17,817	7,183	2,891	80	135,145	2 14	31 20	33 34	1 37	18 31	19 68
17	—	—	—	—	—	—	—	—	-	-	-	-	-	-
18	31,473	- -	600	- -	1,175	614	156	34,018	0 70	3 31	4 21	0 70	3 31	4 21
19	12,969	- -	864	- -	1,084	1,065	1,517	17,499	0 63	3 24	4 7	0 55	1 53	2 28
20	28,928	183	1,862	- -	2,208	1,457	6,806	41,444	2 58	3 9	5 67	2 24	2 0	4 24
21	47,181	- -	-	Details of capital expenditure not given		- -		47,181	1 20	3 44	4 64	1 20	3 44	4 64
22	19,505	- -	3,946	- -	1,622	1,739	557	27,369	0 23	2 57	3 0	0 23	2 57	3 0
23	81,250	- -	7,397	12,100	9,280	5,390	1,940	117,357	8 8	6 5	14 13	8 8	6 5	14 13
24	22,170	- -	- -	- -	- -	- -	- -	22,170	2 25	1 48	3 73	2 4	1 3	3 7
25	92,125	5,101	11,299	- -	13,100	5,594	- -	127,219	2 37	9 0	11 37	1 73	7 1	8 74

(*e*) The tramways were acquired from the Leeds Tramways Company by the Corporation under the powers of the Tramways Act, 1870, possession being obtained 2nd February 1894.
(*f*) Amount expended on the tramway undertaking.

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES—*continued.*		£.	£.	£.	£.	£.	£.	
Lincoln 3 ft. 6 ins.	44 & 45 Vict. c. 164	20,000	- -	20,000	10,500	- -	10,500	1
Liverpool Corporation * 4 ft. 8½ ins.	31 & 32 Vict. c. 167 33 & 34 Vict. c. 176. 34 & 35 Vict. c. 157. 35 & 36 Vict. c. 122.	—	Corporation Return: 468,851	468,851	- -	310,000	310,000	2
	38 & 39 Vict. c. 48. 42 & 43 Vict. c. 96. 42 & 43 Vict. c. 193. 43 & 44 Vict. c. 126. 44 & 45 Vict. c. 105. 45 & 46 Vict. c. 92. 46 & 47 Vict. c. 131. 47 & 48 Vict. c. 112. 48 & 49 Vict. c. 145. 51 & 52 Vict. c. 95. 54 & 55 Vict. c. 162. 55 & 56 Vict. c. 134.	445,000	Lessees' Return: 111,250	556,250	445,000	19,000	464,000	3
Llanelly 3 ft.	43 & 44 Vict. c. 172	15,000	- -	15,000	7,860	- -	7,860	4
London * 4 ft. 8½ ins.	32 & 33 Vict. c. 94 32 & 33 Vict. c. 95. 33 & 34 Vict. c. 167. 33 & 34 Vict. c. 173. 33 & 34 Vict. c. 174. 36 & 37 Vict. c. 55. 36 & 37 Vict. c. 204. 36 & 37 Vict. c. 215. 36 & 37 Vict. c. 223. 43 & 44 Vict. c. 155. 47 & 48 Vict. c. 57. 51 & 52 Vict. c. 144. 52 & 53 Vict. c. 124. 53 Vict. c. 24.	480,000	430,000	910,000	480,000	380,000	860,000	5
London, Camberwell, and Dulwich (*f*) 4 ft. 8½ ins.	45 & 46 Vict. c. 213 46 & 47 Vict. c. 227. 48 & 49 Vict. c. 199. 50 & 51 Vict. c. 183.	20,000	5,000	25,000	20,150	10,000	30,150	6
London, Deptford, and Greenwich * 4 ft. 8½ ins.	42 & 43 Vict. c. 73 44 & 45 Vict. c. 173. 52 & 53 Vict. c. 148. 54 & 55 Vict. c. 209. 56 & 57 Vict. c. 212.	202,000	50,500	252,500	129,889	32,500	162,389	7
London Southern 4 ft. 8½ ins.	45 & 46 Vict. c. 257 47 & 48 Vict. c. 191.	102,000	25,500	127,500	90,000	22,500	112,500	8
London Street 4 ft. 8½ ins.	33 & 34 Vict. c. 171 36 & 37 Vict. c. 183. 36 & 37 Vict. c. 215. 36 & 37 Vict. c. 221. 40 & 41 Vict. c. 219. 42 & 43 Vict. c. 189. 45 & 46 Vict. c. 163. 47 & 48 Vict. c. 94. 48 & 49 Vict. c. 115. 50 Vict. c. 4. 51 & 52 Vict. c. 78.	465,500	121,000	586,500	310,000	72,500	382,500	9
Manchester Carriage and Tramways Company. 4 ft. 8½ ins.	40 & 41 Vict. c. 124 41 & 42 Vict. c. 141. 41 & 42 Vict. c. 163. 42 & 43 Vict. c. 190. 43 & 44 Vict. c. 112. 45 & 46 Vict. c. 138.	500,000	125,000	625,000	404,080	92,720	496,800	10
Manchester Corporation 4 ft. 8½ ins.	38 & 39 Vict. c. 167 40 & 41 Vict. c. 124 (Rusholme Local Board Order). 41 & 42 Vict. c. 163. 44 & 45 Vict. c. 105 (Manchester Corporation and Rusholme Local Board Orders). 56 & 57 Vict. c. 193.	- -	264,500	264,500	- -	190,218	190,218	11
Matlock * 3 ft. 6 ins.	54 & 55 Vict. c. 148	20,000	- -	20,000	15,000	- -	15,000	12
Middlesbrough and Stockton 4 ft. 8½ ins.	36 & 37 Vict. c. 197 38 & 39 Vict. c. 95. 44 & 45 Vict. c. 95.	(*c*) 16,032	- -	16,032	(*c*) 16,032	- -	16,032	13
Morecambe 4 ft. 8½ ins.	49 & 50 Vict. c. 25 55 & 56 Vict. c. 194.	28,000	7,000	35,000	18,471	1,500	19,971	14
Moss Side Local Board 4 ft. 8½ ins.	41 & 42 Vict. c. 221	- -	11,000	11,000	- -	11,000	11,000	15
Neath and District 4 ft. 8½ ins.	36 & 37 Vict. c. 197	35,000	16,000	51,000	26,123	10,635	36,758	16

(*a*) Including goodwill account (243,840 *l.*), which is being met by the setting aside of at least 3,000 *l.* per annum.
(*b*) After writing-off 21,386 *l.* out of Net Revenue.
(*c*) Amount expended on these tramways, as the company's capital is applicable also to other undertakings.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	8,475	- -	363	- -	765	380	- -	9,983	0 24	1 40	1 64	0 24	1 40	1 64
2	304,064	- -	- -	- -	- -	5,194	- -	309,258	18 30	10 40	28 70	18 30	10 39	28 69
3	193,952	- -	81,029	- -	Cars, 38,278 Omnibuses, 11,430	12,138	(a)244,126	580,953						
4	5,825	- -	80	- -	684	697	1,436	8,722	0 17	0 61	0 78	0 17	0 61	0 78
5	616,700	- -	104,040	- -	59,080	- -	49,504	829,324	21 73	1 27	23 20	21 73	1 27	23 20
6	- -	24,150	- -	- -	- -	6,000	- -	30,150	0 30	2 70	3 20	-	-	-
7	151,785	- -	6,450	- -	5,559	3,990	- -	(b) 167,784	2 60	5 22	8 2	1 9	3 63	4 72
8	112,349	- -	- Details cannot be supplied		- -	- -	-	112,349	1 73	3 67	5 60	1 73	3 67	5 60
9	293,958	- -	42,398	- -	26,444	73,345	- -	436,145	12 61	2 34	15 15	12 15	1 22	13 37
10	205,541	- -	88,814	- -	77,620	13,921	- -	385,896	21 37	3 52	25 9	21 37	3 52	25 9
11	145,251	- -	- -	- -	- -	4,076	375	149,702	20 3	13 24	33 27	21 53	10 60	32 33
12	14,130	- -	- -	- -	- -	605	532	15,267	0 4	0 36	0 40	0 4	0 36	0 40
13	9,670	- -	1,011	(d) 3,741	1,207	403	- -	16,032	0 24	2 37	2 61	0 24	2 37	2 61
14	15,826	- -	1,482	- -	(e)	2,163	800	20,271	1 63	2 31	4 14	1 37	1 23	2 60
15	10,601	- -	- -	- -	- -	399	- -	11,000	0 65	0 65	1 50	0 65	0 65	1 50
16	39,803	- -	- - No details given		- -	- -	- -	39,803	0 23	3 54	3 77	0 23	3 54	3 77

(d) On ferry steamers. (e) Cars are purchased on deferred payments.
(f) No Return having been received this year, the last Return is repeated.

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES—*continued.*		£.	£.	£.	£.	£.	£.	
Newcastle-upon-Tyne Corporation * 4 ft. 8½ ins.	40 & 41 Vict. c. 151 42 & 43 Vict. c. 193. 45 & 46 Vict. c. 172. 55 & 56 Vict. c. 236	Corporation Return: —	80,000	80,000	- -	64,500	64,500	1
		Lessees' Return: (a) 40,000	- -	40,000	(a) 40,000	- -	40,000	2
Newport (Mon.) (Company's) 4 ft. 8½ ins.	36 & 37 Vict. c. 197	10,000	5,000	15,000	10,000	- -	10,000	3
Newport Mon. (Corporation) * 4 ft. 8½ ins.	55 & 56 Vict. c. 123	- -	35,000	35,000	- -	- -	- -	4
Northampton Street * 3 ft. 6 ins.	43 & 44 Vict. c. 101 45 & 46 Vict. c. 110. 55 & 56 Vict. c. 194.	45,000	11,250	56,250	45,000	10,000	55,000	5
North Bierley Local Board * 4 ft.	48 & 49 Vict. c. 66 (Bradford and Shelf Order). 54 & 55 Vict. c. 148 (Bradford and Wyke Order).	- -	18,000	18,000	- -	18,000	18,000	6
North Metropolitan 4 ft. 8½ ins.	32 & 33 Vict. c. 101 33 & 34 Vict. c. 172. 34 & 35 Vict. c. 179. 36 Vict. c. 78. 37 & 38 Vict. c. 45. 40 & 41 Vict. c. 111. 43 & 44 Vict. c. 97. 45 & 46 Vict. c. 136. 47 & 48 Vict. c. 168. 48 Vict. c. 26. 50 Vict. c. 12. 51 & 52 Vict. c. 122. 53 & 54 Vict. c. 46. 55 & 56 Vict. c. 160.	1,242,000	310,500	1,552,500	1,109,127	275,500	1,384,627	7
North Shields and Tynemouth District* 3 ft.	42 & 43 Vict. c. 193 (Tynemouth and District Order). 45 & 46 Vict. c. 70. 48 & 49 Vict. c. 66 (Tynemouth Order).	6,000	- -	6,000	6,000	- -	6,000	8
North Staffordshire * 4 ft.	42 & 43 Vict. c. 193 (Stoke-upon-Trent, &c. Order). 43 & 44 Vict. c. 173. 44 & 45 Vict. c. 105. 45 & 46 Vict. c. 138. 46 & 47 Vict. c. 131. 50 Vict. c. 10.	(c) 140,000	20,000	160,000	(c) 128,472	20,000	148,472	9
Nottingham and District * 4 ft. 8½ ins.	40 & 41 Vict. c. 124 47 & 48 Vict. c. 112.	80,000	30,000	110,000	80,000	24,025	104,025	10
Oldham Borough (Corporation) * 4 ft. 8½ ins.	41 & 42 Vict. c. 163 45 & 46 Vict. c. 138.	- -	55,000	55,000	- -	51,283	51,283	11
Oxford (City of) and District 4 ft.	42 & 43 Vict. c. 193 46 & 47 Vict. c. 133. 50 Vict. c. 21.	40,000	16,800	56,800	35,140	16,800	51,940	12
Plymouth Corporation * 3 ft. 4½ ins.	45 & 46 Vict. c. 159 47 & 48 Vict. c. 240. 50 Vict. c. 24. 50 Vict. c. 52. 52 & 53 Vict. c. 207. 55 & 56 Vict. c. 162. 56 & 57 Vict. c. 193.	- -	32,200	32,200	- -	32,200	32,200	13
Plymouth, Stonehouse, and Devonport 4 ft. 8½ ins.	33 & 34 Vict. c. 169 37 & 38 Vict. c. 72.	(b) 54,531	- -	54,531	(b) 54,531	- -	54,531	14
Pontypridd and Rhondda Valley 3 ft. 6 ins.	45 & 46 Vict. c. 70 51 & 52 Vict. c. 64.	No Return received.		—	—	—	—	15
Poole and Bournemouth * 3 ft. 6 ins.	53 & 54 Vict. c. 182	- -	- -	- -	- -	- -	- -	16
Portsmouth Street (including Borough of Portsmouth, Kingston, Fratton, and Southsea). * 4 ft. 8½ ins. and 3 ft. 6 ins.	33 & 34 Vict. c. 170 37 & 38 Vict. c. 183. 39 & 40 Vict. c. 150. 40 & 41 Vict. c. 124. 42 Vict. c. 27. 42 & 43 Vict. c. 118. 44 Vict. c. 46. 46 & 47 Vict. c. 112. 46 & 47 Vict. c. 187. 50 & 51 Vict. c. 141.	(d) 163,735	- -	163,735	(d) 163,735	- -	163,735	17
Preston Corporation and Fulwood Local Board.* 3 ft. 6 ins.	41 & 42 Vict. c. 52 43 & 44 Vict. c. 118. 43 & 44 Vict. c. 162. 48 & 49 Vict. c. 35.	Corporation Return: —	38,000	38,000	- -	26,576	26,576	18
		Local Board Return: —	4,000	4,000	- -	2,104	2,104	19

(a) Capital expended by lessees.
(b) Amount expended on the tramways and the purchase of an omnibus business.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	63,497	- -	- -	- -	- -	253	- -	63,750	7 10	5 74	13 4	4 16	7 20	11 36
2	10,500	11,500	- -	- -	8,500	3,700	5,800	40,000						
3	8,445	- -	1,200	- -	1,000	1,816	139	12,600	0 14	1 45	1 59	0 12	1 1	1 13
4	- -	- -	- -	- -	- -	- -	- -	- -	0 23	2 42	2 65	-	-	-
5	44,038	- -	3,242	- -	2,020	5,700	- -	55,000	1 22	4 11	5 33	1 22	4 11	5 33
6	18,304	- -	- -	- -	- -	- -	- -	18,304	2 29	1 37	3 66	2 29	1 37	3 66
7	1,170,832	(Included in previous Column).	147,903	- -	73,280	68,079	- -	1,460,094	42 12	13 2	55 14	38 78	12 57	51 55
8	3,454	- -	- -	1,458	669	- -	794	6,375	0 56	1 70	2 46	0 56	1 70	2 46
9	102,949	- -	280	24,833	4,606	2,758	3,241	148,667	2 29	18 32	20 61	0 74	6 6	7 0
10	86,201	- -	8,340	- -	8,587	2,220	1,341	106,689	7 40	3 0	10 40	7 40	3 0	10 40
11	47,058	- -	- -	- -	- -	553	1,476	49,087	3 66	4 67	8 53	3 55	4 54	8 29
12	46,980	- -	3,256	- -	2,582	- -	- -	52,818	1 2	3 0	4 2	1 2	3 0	4 2
13	33,315	- -	3,616	- -	1,476	482	545	39,434	3 67	2 30	6 17	1 38	2 42	4 0
14	(*b*) 54,531	- -	- -	Details cannot be supplied		- -	- -	54,531	0 32	1 72	2 24	0 32	1 72	2 24
15	—	—	—	—	—	—	—	—	-	-	-	-	-	-
16	- -	- -	- -	- -	- -	- -	- -	- -	0 24	4 35	4 59	-	-	-
17	(*d*) 163,735	- -	- -	- -	- -	- -	- -	163,735	2 53	17 42	20 15	0 78	14 29	15 27
18	26,576	- -	- -	- -	- -	- -	- -	26,576	0 59	6 31	7 10	0 6	5 19	6 26
19	2,104	- -	- -	- -	- -	- -	- -	2,104	-	1 1	1 1	-	1 1	

(*c*) Ordinary share capital reduced by order of the Court dated 3rd August 1889, by 45,576*l.*, being 4*l.* per share on 11,394 shares of 10*l.* each.
(*d*) Amount expended on the tramways, buildings, and equipment, and cost of acquiring several omnibus businesses.

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES—*continued.*		£.	£.	£.	£.	£.	£.	
Reading - 4 ft.	41 & 42 Vict. c. 231	50,000	-	50,000	21,500	-	21,500	1
Rossendale Valley * 4 ft.	45 & 46 Vict. c. 101 (Manchester, Bury, &c. Order). 50 Vict., Sess. 2, c. 9. 51 & 52 Vict. c. 136. 52 & 53 Vict. c. 214. 55 & 56 Vict. c. 86.	70,000	15,000	85,000	55,640	10,000	65,640	2
St. Helen's and District * 4 ft. 8½ ins.	42 & 43 Vict. c. 192 44 Vict. c. 45. 46 & 47 Vict. c. 126. 56 & 57 Vict. c. 215.	50,000	-	50,000	23,410	17,050	40,460	3
Salford Corporation * 4 ft. 8½ ins.	38 & 39 Vict. c. 101 48 & 49 Vict. c. 102.	-	125,000	125,000	-	90,137	90,137	4
Sheffield Corporation 4 ft. 8½ ins.	35 & 36 Vict. c. 143	Corporation Return: —	80,000	80,000	-	80,000	80,000	5
		Lessees' Return: 80,000	10,000	90,000	80,000	-	80,000	6
Shelf * 4 ft.	48 & 49 Vict. c. 66 (Bradford and Shelf Order).	5,000	-	5,000	3,468	-	3,468	7
Shipley Local Board * 4 ft.	44 & 45 Vict. c. 105 48 & 49 Vict. c. 66. 52 & 54 Vict. c. 182 (Bradford and District Order).	-	3,300	3,300	-	3,200	3,200	8
Somersetshire * 4 ft. 8½ in.	56 Vict. c. 8 (Somerton, &c. Order).	50,000	-	50,000	1,319	-	1,319	9
Southampton Street 4 ft. 8½ ins.	40 & 41 Vict. c. 221 51 & 52 Vict. c. 45.	68,000	21,150	89,150	60,000	16,650	76,650	10
South Eastern Metropolitan 4 ft. 8½ in.	51 & 52 Vict. c. 186	50,000	12,500	62,500	50,000	12,500	62,500	11
South Gosforth * 4 ft. 8½ ins.	44 & 45 Vict. c. 105	(c) 20,900	-	20,900	(c) 20,900	-	20,900	12
South London 4 ft. 8½ ins.	42 & 43 Vict. c. 197 43 & 44 Vict. c. 16. 44 & 45 Vict. c. 184. 45 & 46 Vict. c. 192. 46 & 47 Vict. c. 167.	293,000	73,000	366,000	277,210	89,350	366,560	13
Southport 4 ft. 8½ ins.	35 & 36 Vict. c. 168 39 & 40 Vict. c. 127. 39 & 40 Vict. c. 150.	39,000	10,000	49,000	39,000	(d) 10,412	(c) 49,412	14
South Shields Corporation * 3 ft. 6 ins.	44 & 45 Vict. c. 105 46 & 47 Vict. c. 93.	Corporation Return: —	18,050	18,050	-	16,887	16,887	15
		Lessees' Return: 10,000	-	10,000	3,000	-	3,000	16
South Staffordshire * 3 ft. 6 ins.	42 & 43 Vict. c. 193 (Staffordshire Order). 43 & 44 Vict. c. 172. 43 & 44 Vict. c. 173 (Walsall and District Order). 44 & 45 Vict. c. 163 (Dudley and Tipton, South Staffordshire, and Wednesbury and West Bromwich Orders). 45 & 46 Vict. c. 70 (Staffordshire Order). 45 & 46 Vict. c. 101 (Walsall and District Order). 47 & 48 Vict. c. 80 (Walsall and District Order). 50 Vict. c. 22. 52 & 53 Vict. c. 194.	Ordinary Stock, 129,650 Preference Shares, 86,580	50,000	266,230	333,295	49,830	383,125	17
Stockport and Hazel Grove - 4 ft. 8½ ins.	52 & 53 Vict. c. 110	17,000	-	17,000	12,750	4,615	17,365	18
Stockton-on-Tees and District * 4 ft. and 3 ft.	43 & 44 Vict. c. 172 (Darlington and Stockton Orders). 47 & 48 Vict. c. 102. 52 & 53 Vict. c. 92.	100,000	13,080	113,080	69,584	13,080	82,664	19
Sunderland (Company) * 4 ft. 8½ ins.	41 & 42 Vict. c. 231 42 & 43 Vict. c. 193. 43 & 44 Vict. c. 172. 44 & 45 Vict. c. 45 & 46 Vict. c. 70.	80,000	-	80,000	80,000	-	80,000	20
Sunderland Corporation * 4 ft. 8½ ins.	42 & 43 Vict. c. 193	-	25,000	25,000	-	17,450	17,450	21
Swansea * 4 ft. 8½ ins.	37 & 38 Vict. c. 138 41 & 42 Vict. c. 147. 42 & 43 Vict. c. 193. 45 & 46 Vict. c. 128.	130,000	13,750	143,750	97,260	10,400	107,660	22

(a) Capital expenditure has been reduced by revenue to 80,000 *l.*
(b) Contract for the lines, &c., was a lump sum of 62,500*l.* (c) Amount of capital expended. (d) Owing to Bank.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	19,491	- -	1,200	- -	1,386	1,125	862	24,064	0 70	1 38	2 28	0 70	1 38	2 28
2	52,405	- -	- -	7,950	2,650	4,214	- -	67,219	1 10	8 7	9 17	1 32	5 15	6 47
3	44,765	- -	- -	- -	- -	- -	- -	44,765	0 69	9 73	10 62	0 69	9 73	10 62
4	90,137	- -	- -	- -	- -	- -	- -	90,137	8 1	4 59	12 60	8 1	4 59	12 60
5	90,507	- -	- -	- -	- -	- -	- -	90,507	9 46	0 58	10 24	9 14	0 20	9 34
6	51,883	- -	14,640	- -	9,200	8,288	- -	(a)84,011						
7	3,465	- -	- -	- -	- -	- -	- -	3,465	0 5	0 52	0 57	0 5	0 52	0 57
8	2,627	- -	- -	- -	- -	- -	- -	2,627	0 21	1 24	1 45	0 21	1 24	1 45
9	- -	500	- -	- -	- -	1,141	- -	1,641	-	11 40	11 40	-	-	-
10	69,969	- -	4,236	- -	2,530	- -	- -	76,735	0 28	5 52	6 0	-	5 3	5 3
11	(b) 62,500	- -	- -	- -	- -	- -	- -	62,500	0 61	1 64	2 45	0 61	1 64	2 45
12	13,000	- -	4,000	- -	2,400	1,000	500	20,900	0 29	0 30	0 59	0 29	0 30	0 59
13	293,952	- -	22,224	- -	14,000	34,412	3,709	368,297	8 31	4 39	12 70	8 31	4 39	12 70
14	37,623	- -	3,710	- -	4,240	2,650	1,189	49,412	0 74	5 48	6 42	0 74	5 48	6 42
15	17,918	- -	- -	- -	- -	739	1,247	19,904	1 29	4 39	5 68	0 64	1 59	2 43
16	- -	- -	1,253	- -	1,547	100	1,142	4,042						
17	311,649	- -	600	34,531	5,520	10,914	(f)32,604	395,818	10 35	14 70	25 25	9 53	12 78	22 51
18	14,641	- -	1,465	- -	1,499	713	- -	18,318	0 70	2 68	3 58	0 66	2 49	3 35
19	74,042	- -	1,012	4,390	2,757	151	954	83,306	1 8	6 23	7 31	1 2	5 21	6 23
20	61,176	- -	2,542	- -	5,487	4,053	2,470	75,728	3 23	1 22	4 45	2 64	1 12	3 7
21	17,450	- -	- -	- -	- -	- -	- -	17,450	1 25	1 45	2 70	1 4	1 23	2 27
22	80,140	- -	3,525	- -	4,077	12,318	5,907	105,967	1 27	4 12	5 39	1 27	4 12	5 39

(e) The company has a reserve fund of 13,800*l.* accumulated out of profits, of which 2,500*l.* is lent to the Preston Corporation, and the balance of 11,300*l.* is deposited in Bank.

(f) £. 17,414 on account of an electric installation.

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
ENGLAND AND WALES – *continued.*		£.	£.	£.	£.	£.	£.	
Tong Local Board * 4 ft.	53 & 54 Vict. c. 181	- -	8,000	8,000	- -	5,700	5,700	1
Wallasey 4 ft. 8½ ins.	41 & 42 Vict. c. 238 49 & 50 Vict. c. 70.	No Return received.		—	—	—	—	2
Walton-on-the-Hill Local Board * 4 ft. 8½ ins.	43 & 44 Vict. c. 173	- -	35,000	35,000	- -	34,000	34,000	3
Wantage * 4 ft. 8½ ins.	37 & 38 Vict. c. 183 39 & 40 Vict. c. 42.	Ordinary, 10,000 Preference, 3,000	- -	13,000	11,170	- -	11,170	4
Wavertree Local Board 4 ft. 8½ ins.	41 & 42 Vict. c. 231	- -	20,000	20,000	- -	10,000	10,000	5
West Derby Local Board 4 ft. 8½ ins.	41 & 42 Vict. c. 231 45 & 46 Vict. c. 92.	- -	41,500	41,500	- -	41,500	41,500	6
West Metropolitan * (c) 4 ft. 8½ ins.	36 & 37 Vict. c. 85 (Southall, Ealing, and Shepherd's Bush Order). 39 & 40 Vict. c. 150 (Shepherd's Bush Order). 44 & 45 Vict. c. 164 (Shepherd's Bush and Hammersmith Order). 45 & 46 Vict. c. 205. 47 & 48 Vict. c. 100. 50 & 51 Vict. c. 196. 52 & 53 Vict. c. 202. 54 & 55 Vict. c. 132. 56 Vict. c. 48.	(a) 240,430	53,750	294,180	(a) 170,000	32,500	202,500	7
Weston-super-Mare, Clevedon, and Portishead.* 4 ft. 8½ ins.	48 & 49 Vict. c. 182 53 & 54 Vict. c. 132. 55 & 56 Vict. c. 182.	No Return received.		—	—	—	—	8
Wigan Corporation * 3 ft. 6 ins.	42 & 43 Vict. c. 193 47 & 48 Vict. c. 80. 56 & 57 Vict. c. 182.	Corporation Return: —	62,399	62,399	- -	32,965	32,965	9
		Lessees' Return: 50,000	7,000	57,000	25,000	7,000	32,000	10
Wirral 4 ft. 8½ ins.	37 & 38 Vict. c. 183	30,000	7,500	37,500	22,740	7,500	30,240	11
Wisbech and Upwell (Great Eastern Railway Company).* 4 ft. 8½ ins.	44 & 45 Vict. c. 134 45 & 46 Vict. c. 166.	(b) 41,919	- -	41,919	(b) 41,919	- -	41,919	12
Withington Local Board * 4 ft. 8½ ins.	43 & 44 Vict. c. 172	- -	25,000	25,000	- -	11,625	11,625	13
Wolverhampton * 4 ft. 8½ ins.	40 & 41 Vict. c. 124 41 & 42 Vict. c. 231. 43 & 44 Vict. c. 172.	100,000	- -	100,000	82,590	- -	82,590	14
Wolverton and Stony Stratford * 3 ft. 6 ins.	46 & 47 Vict. c. 93 50 & 51 Vict. c. 123.	5,000	- -	5,000	5,000	- -	5,000	15
Wolverton and Stony Stratford (Deanshanger Extension).* 3 ft. 6 ins.	50 & 51 Vict. c. 123	No Return received.		—	—	—	—	16
Woolwich and South East London 3 ft. 6 ins.	43 & 44 Vict. c. 173 44 & 45 Vict. c. 105.	Ordinary, 48,000 Preference, 10,000	20,000	78,000	52,689	20,000	72,689	17
Worcester 3 ft.	44 & 45 Vict. c. 164 48 & 49 Vict. c. 66. 50 & 51 Vict. c. 123. 53 & 54 Vict. c. 181.	12,500	10,500	23,000	11,938	10,471	22,409	18
Wrexham District 3 ft.	36 & 37 Vict. c. 76	10,000	2,500	12,500	8,980	- -	8,980	19
Yarmouth and Gorleston 3 ft. 6 ins.	34 & 35 Vict. c. 189 (Lowestoft and Yarmouth Order). 46 & 47 Vict. c. 133.	20,000	- -	20,000	20,000	- -	20,000	20
York * 4 ft.	42 & 43 Vict. c. 193 44 & 45 Vict. c. 105.	8,500	6,000	14,500	8,500	6,000	14,500	21
TOTAL, ENGLAND AND WALES		8,835,191	4,824,311	13,659,502	7,469,282	3,716,912	11,186,194	22

(a) This has been reduced by the sum of 84,258 *l.* (52 & 53 Vict. c. 202), the ordinary shares of 140,430 *l.* being reduced to 56,172 *l.*
(b) Amount expended on tramway.
(c) No return having been received, that of last year is repeated.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	5,700	- -	- -	- -	- -	480	- -	6,180	0 19	1 5	1 24	0 19	1 5	1 24
2	—	—	—	—	—	—	—	—	-	-	-	-	-	-
3	31,718	- -	- -	- -	- -	1,039	1,243	34,000	3 12	0 8	3 20	3 12	0 8	3 20
4	Lines and Works, 6,378 Land and Houses, 2,202	- -	190	1,010	803	706	330	11,619	0 5	2 33	2 38	0 5	2 33	2 38
5	9,220	- -	- -	- -	- -	578	1,104	10,902	0 62	0 28	1 10	0 62	0 28	1 10
6	39,367	- -	- -	- -	- -	1,810	323	41,500	4 1	1 22	5 23	4 1	1 22	5 23
7	189,247	- -	10,715	- -	9,925	8,386	8,849	227,122	6 23	5 76	12 19	4 16	5 76	10 12
8	—	—	—	—	—	—	—	—	-	-	-	-	-	-
9	31,057	- -	- -	- -	- -	167	- -	31,224	1 12	8 19	9 31	0 52	4 67	5 39
10	25,000	- -	- -	4,324	1,808	2,077	- -	33,209						
11	22,108	- -	2,241	- -	2,704	2,122	1,498	30,673	0 34	2 45	2 79	0 34	2 45	2 79
12	31,418	- -	- -	7,000	2,485	1,016	- -	41,919	0 34	7 30	7 64	0 34	7 30	7 64
13	9,943	- -	- -	- -	- -	2,009	33	11,985	0 64	2 45	3 29	0 41	0 58	1 19
14	74,362	- -	2,784	- -	4,112	3,397	570	85,225	1 70	6 75	8 65	1 70	6 65	8 55
15	- -	- -	No Return of Capital expended rendered				- -	- -	0 35	2 19	2 54	0 28	1 72	2 20
16	—	—	—	—	—	—	—	—	-	-	-	-	-	-
17	64,186	- -	5,010	- -	2,276	1,612	- -	73,084	1 74	3 3	4 77	1 74	3 3	4 77
18	22,366	- - -	Details of Capital Expenditure not given				- - -	22,366	0 53	2 49	3 22	0 53	2 49	3 22
19	5,863	- -	- -	- -	254	1,888	803	8,808	0 3	6 27	6 30	0 3	3 22	3 25
20	17,314	- -	1,200	- -	1,800	400	- -	20,714	0 31	2 57	3 8	0 31	2 57	3 8
21	14,500	- - -	Lump sum paid for complete undertaking				- - -	14,500	0 60	2 28	3 8	0 60	2 28	3 8
22	8,780,787	78,184	669,515	377,893	567,037	528,806	452,141	11,454,363	370 5	556 60	926 65	332 55	439 32	772 7

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
SCOTLAND:		£.	£.	£.	£.	£.	£.	
Aberdeen District * - 4 ft. 8½ ins.	35 & 36 Vict. c. 194 - 41 & 42 Vict. c. 234. 51 & 52 Vict. c. 99.	75,000	40,000	115,000	54,910	12,000	66,910	1
Dundee Corporation * - - - - 4 ft. 8½ ins.	35 & 36 Vict. c. 191 - 41 Vict. c. 94. 50 & 51 Vict. c. 72. 55 & 56 Vict. c. 235	Corporation Return: —	(a) 56,601	56,601	- -	(a) 56,601	56,601	2
		Lessees' Return: 33,728	- -	33,728	10,540	- -	10,540	3
Edinburgh Corporation (formerly included in "Edinburgh Street").* 4 ft. 8½ ins.	(*See* under "Edinburgh Street"). 56 & 57 Vict. c. 78.	Corporation Return: —	(b) 185,588	185,588	- -	(b) 185,588	185,588	4
		(c) Lessees' Return: 117,500	- -	117,500	92,500	- -	92,500	5
Edinburgh Northern * - - - 4 ft. 8½ ins.	47 & 48 Vict. c. 241 - 50 & 51 Vict. c. 70.	120,000	30,000	150,000	105,000	26,020	131,020	6
Edinburgh Street * - - - - 4 ft. 8½ ins.	34 & 35 Vict. c. 89 - 36 & 37 Vict. c. 236. 37 & 38 Vict. c. 68. 38 & 39 Vict. c. 128. 44 & 45 Vict. c. 176. 45 & 46 Vict. c. 91. 45 & 46 Vict. c. 134. 55 & 56 Vict. c. 184. 56 Vict. c. 56.	225,000	56,250	281,250	150,000	31,350	181,350	7
Glasgow Corporation * - - - - 4 ft. 7½ ins.	33 & 34 Vict. c. 175 - 34 & 35 Vict. c. 108. 35 & 36 Vict. c. 121. 35 & 36 Vict. c. 198. 38 & 39 Vict. c. 87. 38 & 39 Vict. c. 123. 42 & 43 Vict. c. 122. 47 Vict. c. 25. 48 & 49 Vict. c. 156. 54 & 55 Vict. c. 176. 56 & 57 Vict. c. 208.	Corporation Return: —	900,000	900,000	- -	674,650	674,650	8
		Lessees' Return: (d) 62,213	- -	62,213	62,213	- -	62,213	9
Gourock Corporation (formerly part of Vale of Clyde). 4 ft. 7½ ins.	*See* under "Govan Corporation").	The Gourock Commissioners acquired the Tramways at the nominal price of 1*s*.						10
Govan Corporation (formerly Glasgow and Ibrox and part of Vale of Clyde). 4 ft. 7½ ins.	34 & 35 Vict. c. 95 - - 34 & 35 Vict. c. 108. 38 & 39 Vict. c. 113. 38 & 39 Vict. c. 123. 39 & 40 Vict. c. 65. 40 & 41 Vict. c. 97. 51 & 52 Vict. c. 164. 54 & 55 Vict. c. 38. 56 & 57 Vict. c. 69.	- -	68,988	68,988	- -	68,988	68,988	11
Greenock and Port Glasgow - - 4 ft. 7½ ins.	50 & 51 Vict. c. 177 -	40,000	10,000	50,000	29,930	- -	29,930	12
Greenock Corporation * - - - 4 ft. 8½ in.	34 & 35 Vict. c. 95 - - 38 & 39 Vict. c. 113. 40 & 41 Vict. c. 193. 56 & 57 Vict. c. 180.	- -	50,000	50,000	- -	31,979	31,979	13
Paisley * - - - - - - - 4 ft. 7½ ins.	48 & 49 Vict. c. 102 -	20,000	6,666	26,666	8,785	2,200	10,985	14
Perth and District * - - - - 3 ft. 6 ins.	56 Vict. c. 8 - - -	15,000	- -	15,000	875	- -	875	15
Rothesay - - - - - - - 4 ft.	43 & 44 Vict. c. 173 -	30,000	5,000	35,000	16,090	5,000	21,090	16
Stirling and Bridge of Allan - - 4 ft. 8½ ins.	35 & 36 Vict. c. 158 -	20,000	- -	20,000	15,470	- -	15,470	17
	TOTAL, SCOTLAND - - -	758,441	1,409,093	2,167,534	546,313	1,094,376	1,640,689	18

(*a*) Amount expended by the Commissioners on and incident to the construction of the tramways.
(*b*) Amount expended.
(*c*) The above relates to the Edinburgh and District Tramways Company, Limited. No part of the capital of Dick Kerr and Company, Limited, is used in connection with the Edinburgh Corporation Tramways.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	51,757	4,702	4,532	- -	2,922	2,695	583	67,191	2 15	8 34	10 49	2 15	8 34	10 49
2	56,601	- -	- -	- -	- -	- -	- -	56,601	4 4	3 11	7 15	4 4	3 11	7 15
3	10,960	- -	1,880	4,837	2,013	- -	2,604	22,294						
4	169,795	- -	- -	- -	- -	15,793	- -	185,588	9 43	2 27	11 70	9 43	2 27	11 70
5	- -	- -	22,371	- -	9,000	- -	46,960	78,331						
6	147,966	- - -	Company unable to supply these details				- - -	147,966	3 50	0 32	4 2	2 42	0 7	2 49
7	100,587	- -	7,548	- -	4,203	18,550	- -	130,888	5 16	2 24	7 40	4 54	1 78	6 52
8	295,806	153,529	100,521	- -	34,333	54,806	34,527	673,522	36 68	3 2	39 70	29 49	0 48	30 17
9	- -	- -	58,883	- -	3,330	- -	- -	62,213						
10	- -	- -	- -	- -	- -	- -	- -	- -	1 74	-	1 74	1 74	-	1 74
11	64,966	- -	- -	- -	- -	2,226	- -	67,192	3 66	-	3 66	3 66	-	3 66
12	34,760	- -	3,093	- -	1,800	3,203	3,374	46,230	2 63	0 5	2 68	2 63	0 5	2 68
13	29,156	- -	- -	- -	- -	2,256	- -	31,412	2 18	0 29	2 47	2 18	0 29	2 47
14	15,971	- -	2,266	- -	1,283	840	585	20,945	0 62	1 54	2 36	0 55	1 25	2 0
15	- -	- -	- -	- -	- -	500	150	650	0 26	2 41	2 67	-	-	-
16	15,985	- -	775	- -	1,070	2,716	1,633	22,179	1 7	1 23	2 30	1 7	1 23	2 30
17	13,305	- -	450	- -	600	1,115	- -	15,470	0 43	2 68	3 31	0 15	3 14	3 29
18	1,007,615	158,231	202,319	4,837	60,554	104,700	90,416	1,628,672	74 75	28 30	103 25	65 25	22 61	88 6

(*d*) Amount of capital expenditure returned by lessees.

PART I.—RETURN of Street and Road Tramways, showing Amount of Capital Authorised, Paid up,

NAME OF TRAMWAY, AND GAUGE. * Mechanical Power Authorised (subject in most cases to Board of Trade approval).	Special Acts, or Acts confirming Provisional Orders, relating to the Tramways.	CAPITAL AUTHORISED. By Shares.	CAPITAL AUTHORISED. By Loans.	CAPITAL AUTHORISED. TOTAL.	CAPITAL PAID UP. By Shares.	CAPITAL PAID UP. By Loans (including Debenture Stock).	CAPITAL PAID UP. TOTAL.	
IRELAND:		£.	£.	£.	£.	£.	£.	
Belfast and Ligoniel * - 4 ft. 8½ ins.	Order of Lord Lieutenant in Council, 1892.	7,500	2,500	10,000	7,500	1,730	9,230	1
Belfast Street - - - - - - 4 ft. 8½ ins.	35 & 36 Vict. c. 193 - 36 & 37 Vict. c. 233. 38 & 39 Vict. c. 132. 41 & 42 Vict. c. 235. 43 & 44 Vict. c. 75. 47 & 48 Vict. c. 125. 51 & 52 Vict. c. 79. Order of Lord Lieutenant in Council, 1892.	376,000	94,000	470,000	246,000	60,000	306,000	2
Blessington and Poulaphuca * - - 5 ft. 3 ins.	Order of Lord Lieutenant in Council, 1889. Extension Order, 1892.	20,000	5,000	25,000	—	—	—	3
Castlederg and Victoria Bridge * - - 3 ft.	46 & 47 Vict. c. 105 -	20,000	7,000	27,000	19,080	4,425	23,505	4
Cavehill and Whitewell * - - - 4 ft. 8 ins.	Order of Lord Lieutenant in Council, 1881. Cavehill and Whitewell Tramway (Amendment) Order, 1893.	15,000	5,000	20,000	12,165	4,000	16,165	5
Dublin and Blessington * - - - 5 ft. 3 ins.	Orders of Lord Lieutenant in Council, 1880, 1882, 1883, and 1887. 46 & 47 Vict. c. 30.	100,000	20,000	120,000	97,063	- -	97,063	6
Dublin and Lucan * - - - - - 3 ft.	Order of Lord Lieutenant in Council, 1880.	30,000	10,000	40,000	29,991	5,500	35,491	7
Dublin Southern District * - - - 5 ft. 3 ins. and 4 ft.	41 & 42 Vict. c. 159 - 46 & 47 Vict. c. 232. 50 & 51 Vict. c. 43. 46 & 47 Vict. c. 104. 56 & 57 Vict. c. 220.	220,000	55,000	275,000	70,000	- -	70,000	8
Dublin United * - - - - - - 5 ft. 3 ins.	34 & 35 Vict. c. 88 - - 36 & 37 Vict. c. 91. 38 & 39 Vict. c. 209. 39 & 40 Vict. c. 233. 41 & 42 Vict. c. 149. 41 & 42 Vict. c. 158. 43 & 44 Vict. c. 169. 44 & 45 Vict. c. 140. Orders of Lord Lieutenant in Council, 1885 and 1892.	600,000	150,000	750,000	548,710	88,100	636,810	9
Galway and Salt Hill - - - - - 3 ft.	40 & 41 Vict. c. 237 -	35,000	- -	35,000	15,990	- -	15,990	10
Giant's Causeway, Portrush, and Bush Valley.* 3 ft.	43 & 44 Vict. c. 197 - 48 & 49 Vict. c. 166	50,000	25,000	75,000	20,500	22,250	42,750	11
Londonderry (City of)* - - - 4 ft. 8½ ins.	Order of Lord Lieutenant in Council 1893.	10,000	- -	10,000	- -	- -	- -	12
Lucan, Leixlip, and Celbridge * (a) - 3 ft.	Order of Lord Lieutenant in Council, 1887.	25,000	8,333	33,333	10,000	- -	10,000	13
Portstewart * - - - - - - 3 ft.	Order of Lord Lieutenant in Council, 1880.	5,000	1,666	6,666	5,000	1,666	6,666	14
Sydenham District (Belfast) * - - 4 ft. 8½ ins.	Orders of Lord Lieutenant in Council, 1885, 1887, 1889, and 1892.	9,000	3,000	12,000	9,000	1,100	10,100	15
Warrenpoint and Rostrevor * - - 3 ft.	Order of Lord Lieutenant in Council, 1875. 39 & 40 Vict. c. 120.	5,500	1,500	7,000	5,500	420	5,920	16
	TOTAL, IRELAND - - -	1,528,000	387,999	1,915,999	1,096,499	189,191	1,285,690	17
	TOTAL, UNITED KINGDOM - - -	11,121,632	6,621,403	17,743,035	9,112,094	5,000,479	14,112,573	18

(a) No Return having been received, that of last year is repeated.

(b) The last figures returned by the company are given.

and Expended; Length of Tramway Authorised and Open, &c., to 30th June 1894—*continued.*

	CAPITAL EXPENDED.								Length of Tramway Authorised (exclusive of Expired Powers).			Length of Tramway Open for Public Conveyance of Passengers.		
	On Lines and Works Open for Traffic (including Land, Buildings, &c.).	On Lines and Works in course of Construction (including Land, Buildings, &c.).	On Horses.	On Locomotive Engines.	On Cars.	Legal and Parliamentary.	Any other Expenses not included in the foregoing.	TOTAL.	Double Line.	Single Line.	TOTAL.	Double Line.	Single Line.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.	M. CH.
1	8,409	- -	- -	- -	- -	505	277	9,191	0 27	1 10	1 37	0 27	1 10	1 37
2	264,080	- -	25,620	- -	16,300	- -	- -	306,000	7 78	12 13	20 11	7 78	12 13	20 11
3	--	--	—	—	—	—	—	—	-	-	-	-	-	-
4	16,347	- -	- -	3,800	3,344	868	299	24,658	0 6	7 6	7 12	0 6	7 6	7 12
5	9,545	- -	991	1,975	1,483	499	1,177	15,670	0 11	3 27	3 38	0 11	3 27	3 38
6	83,680	- -	- -	5,000	3,365	5,000	- -	97,045	0 50	15 18	15 68	0 50	15 18	15 68
7	27,166	- -	- -	5,086	3,197	- -	921	36,370	0 17	6 61	6 78	0 17	6 61	6 78
8	69,611	- -	2,752	- -	4,086	4,760	1,207	82,416	2 61	5 10	7 71	2 61	5 10	7 71
9	440,486	- -	31,207	- -	31,640	9,972	126,804	640,109	24 60	8 60	33 40	24 45	8 63	33 28
10	13,860	- -	300	- -	1,110	1,720	- -	15,990	0 10	2 0	2 10	0 10	2 0	2 10
11	33,164	- -	- -	2,754	2,460	4,570	2,364	45,312	0 60	8 0	8 60	0 60	8 0	8 60
12	- -	- -	- -	- -	- -	- -	- -	- -	1 16	0 14	1 30	-	-	-
13	8,850	- -	- -	850	300	- -	- -	10,000	0 10	5 20	5 30	0 2	1 40	1 42
14	5,194	- -	- -	1,568	335	- -	- -	(b) 7,097	-	1 68	1 68	-	1 68	1 68
15	9,187	- -	- -	- -	- -	315	215	9,717	0 39	1 19	1 58	0 39	1 19	1 58
16	5,699	- -	193	- -	65	131	- -	6,088	-	3 24	3 24	-	3 24	3 24
17	994,278	- -	61,063	21,033	67,685	28,340	133,264	1,305,663	39 45	81 30	120 75	38 6	77 39	115 45
18	10,782,680	236,415	932,897	403,763	695,276	661,846	675,821	14,388,698	484 45	666 40	1,151 5	436 6	539 52	975 58

PART II.

RETURN of STREET and ROAD TRAMWAYS, authorised by Parliament, showing the GROSS and the Number of Miles Run by CARS, during the Year ended 30th June 1894,

NAME OF TRAMWAY.	Length of Tramway Open.	GROSS RECEIPTS. From Passengers.	From Parcels and Mails.	From Animals, Goods, and Minerals.	From all other Sources.	TOTAL.	WORKING EXPENDITURE. Maintenance of Way and Works.	Locomotive Power.	Animal Power.	Repairs and Renewals of Engines.	Renewals, &c., of Horses.	Repairs and Renewals of Cars.	
ENGLAND AND WALES:	M. CH.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
Accrington Corporation (Lessees' Return.)	5 31	13,759	185	–	403	14,347	1,009	3,884	– –	1,819	– –	343	1
Haslingden and Rawtenstall Extension.	4 5												
Barrow-in-Furness	5 40	4,356	–	–	139	4,495	160	1,860	– –	674	– –	112	2
Bath	No Return received.	–	–	—	—	—	—	—	—	—	—	—	3
Birkdale and Southport	3 71	2,819	–	–	204	3,023	195	– –	937	– –	– –	104	4
Birkenhead Corporation	6 71	No Return received from the Lessees.				—	—	—	—	—	—	—	5
Birmingham and Aston	3 66	Cars, 19,648 Omnibuses, 1,297	26	–	2,996	23,967	1,505	3,535	761	3,170	71	862	6
Birmingham Corporation (portion).	1 2												
Birmingham and Midland	9 0	Company's Return: 18,180	3	–	1,004	19,187	1,784	4,420	458	2,163	– –	608	7
Birmingham Corporation (portion).	1 75	Mr. B. Crowther's Return for portion worked by him: 589	–	–	– –	589	– –	– –	247	– –	72	5	8
Birmingham Central	8 14	Steam: *80,300*	–	–	*930*	*81,230*	*10,055*	*21,982*	– –	*10,083*	– –	*1,749*	9
Birmingham Corporation (portion).	16 49	Horse: *28,586*	–	–	*695*	*29,281*	*593*	– –	*19,974*	– –	*978*	*1,235*	10
		Cable: *35,849*	–	–	*225*	*36,074*	*1,080*	*6,367*	– –	*2,611*	– –	*1,358*	11
		Electric: *9,604*	–	–	*130*	*9,734*	*1,283*	*3,482*	– –	*2,151*	– –	*384*	12
		General: – –	–	–	– –	– –	– –	– –	– –	– –	– –	– –	13
		154,339	–	–	1,980	156,319	13,011	31,831	19,974	14,845	978	4,725	14
Birmingham Corporation	Tramways leased. Traffic included in "Birmingham and Aston," "Birmingham and Midland," and "Birmingham Central," Returns.												15
Blackburn and Over Darwen	5 15	9,289	346	–	191	9,826	2,178	– –	– –	947	– –	648	16
Blackburn Corporation (Lessees' Return.)	8 40	14,975	141	–	579	15,695	798	2,891	2,619	873	279	217	17
Blackpool Corporation (worked by the Local Authority). (Lessees' Return.)	1 79	6,132	5	–	200	6,337	115	486	1,054	(*g*) 532	–	227	18
Blackpool, St. Anne's and Lytham	Not yet constructed.		–	–	—	—	—	—	—	—	—	—	19
Bolton and Suburban (Lessees' Return.)	15 42	24,605	147	–	– –	24,752	– –	– –	11,227	– –	2,000	1,150	20
Bootle Corporation	Tramways leased. Traffic included in "Liverpool Corporation" Return.						—	—	—	—	—	—	21
Bradford Corporation	14 50												
North Bierley Local Board	3 66	(*i*) Bradford Tramways and Omnibus Company's Return (Mileage, 14 M. 39 CH.): 37,251	358	–	518	38,127	127	15,636	2,520	3,136	613	890	22
Shelf	0 57												
Shipley Local Board	1 45	Bradford and Shelf Tramway Company's Return (Mileage, 7 M. 43 CH.): 13,900	154	–	499	14,553	– –	1,215	– –	649	– –	– –	23
Tong Local Board	1 24												
Brighton and Shoreham (*m*)	4 42	2,200	–	–	60	2,260	200	– –	1,100	– –	85	150	24
Bristol (*n*)	14 7	65,607	400	–	1,867 Carriage Department, 21,563	89,437	2,561	– –	23,924	– –	3,369	5,773	25
Burnley and District	7 12	14,272	345	–	301	14,918	1,559	1,363	– –	1,171	– –	450	26
Bury, Rochdale, and Oldham	27 0	36,381	289	–	1,286	37,956	3,292	13,953	– –	6,360	– –	1,199	27
Oldham Borough (portion)	3 33												

(*a*) Estimate. (*b*) Including omnibuses. (*c*) Depreciation, 2,500*l.*; debenture interest, 1,652*l.*; corporation rent, 1,211*l.*; surplus, 1,031*l.*
(*d*) Rent paid to the Birmingham and Midland Tramways for use of cars and lines. (*e*) Including 40 omnibuses.
(*f*) Four of these cars are "open" cars, and are not used at all. (*g*) Including electrical apparatus.
(*h*) Two fixed engines for driving dynamos. (*i*) The figures given are generally estimated (*see* Note in Part I.) (*j*) Directors' fees only.

PART II.

RECEIPTS, WORKING EXPENDITURE, and NET RECEIPTS; the Number of PASSENGERS Conveyed, together with the Number of HORSES, ENGINES, and CARS at that Date.

	WORKING EXPENDITURE.								NET RECEIPTS.	Number of Passengers Conveyed (including Season or Composition Ticket-holders).	Number of Miles Run by Cars.	Working Stock.		
	Traffic Expenses.	Direction and Management.	Rent of Offices, Stables, and Sheds.	Rates, Taxes, and Tolls.	Compensation for Personal Injury.	Legal and Parliamentary.	Any other Working Expenses not included in the foregoing.	TOTAL.				Number of Horses.	Number of Locomotive Engines.	Number of Cars.
	£.	£.	£.	£.	£.	£.	£.	£.	£.					
1	1,369	524	1,206	458	5	- -	313	10,930	3,417	1,932,970	262,101	- -	17	17
2	730	282	11	237	56	12	166	4,300	195	(a) 856,754	136,222	- -	8	8
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	503	168	30	34	11	31	164	2,182	841	(a) 377,280	60,307	22	- -	6
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	2,317	1,105	132	832	92	103	327	14,812	9,155	Cars, 3,876,564 Omnibuses, 177,143	Cars, 331,798 Omnibuses, 29,646	21	27	(b) 31
7	1,399	365	771	Included in previous Column.	119	64	642	12,793	(c) 6,394	4,250,343	Steam, 251,978 Horse, 15,172	12	24	24
8	140	26	13	- -	7	- -	(d) 100	610	Loss, 21	141,525	18,203	14	- -	2
9	*8,755*			*4,108*	*1,073*	*477*	*283*	*58,564*	- -	*15,231,076*	*1,222,798*	- -	*82*	*64*
10	*3,634*			*530*	*79*	*130*	*117*	*27,270*	- -	*4,222,262*	*698,760*	*408*	- -	(e) *50*
11	*3,713*	*4,684*	*1,319*	*1,028*	*56*	*108*	*121*	*16,442*	- -	*6,699,476*	*698,850*	- -	- -	*26*
12	*1,011*			*477*	*15*	*419*	*33*	*9,255*	- -	*1,303,833*	*139,123*	- -	- -	*12*
13	- -			- -	- -	- -	- -	5,967	- -	—	—	—	—	—
14	17,113	4,684	1,319	6,143	1,223	1,134	554	117,534	38,785	27,456,647	2,759,531	408	82	152
15	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16	2,511	501	95	299	183	- -	276	7,638	2,183	1,301,378	161,185	- -	11	(f) 16
17	2,111	424	125	529	187	47	153	11,253	4,442	2,519,459	317,546	54	14	27
18	1,006	111	50	460	- -	- -	132	4,173	2,164	919,520	97,440	- -	(h)	10
19	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20	4,872	350	827	415	102	- -	- - -	20,943	3,809	(a) 3,096,070	(a) 590,213	320	- -	32
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	908	1,234	90	1,307	710	Included in previous Column.	983	28,154	9,973	5,960,160	770,916	63	33	43
23	4,227	(j) 150	(k) 2,758	736	(l) 130	- -	220	10,085	4,468	3,336,000	(a) 201,084	- -	14	14
24	340	148	- -	39	- -	- -	- -	2,062	198	270,200	64,000	27	- -	8
25	29,031	1,263	4,564	- -	173	110	951	71,722	17,715	13,680,395	1,053,046	802	- -	(o) 95
26	3,439	354	100	373	8	9	- -	8,826	6,092	1,641,018	194,914	- -	14	13
27	5,088	1,143	390	769	196	75	163	32,633	5,323	5,956,400	802,932	- -	85	81

(*k*) Rent of local lines paid to local authorities.
(*l*) Insurance premiums.
(*m*) Receipts and expenses estimated. Accounts being made up to 31st October.
(*n*) The receipts and expenses include all those incident to the Carriage department, as well as the Tramways department.
(*o*) Including omnibuses.

PART II.—RETURN of Street and Road Tramways, showing the Gross Receipts,

NAME OF TRAMWAY.	Length of Tramway Open.	GROSS RECEIPTS. From Passengers.	From Parcels and Mails.	From Animals, Goods, and Minerals.	From all other Sources.	TOTAL.	WORKING EXPENDITURE. Maintenance of Way and Works.	Locomotive Power.	Animal Power.	Repairs and Renewals of Engines.	Renewals, &c., of Horses.	Repairs and Renewals of Cars.	
ENGLAND AND WALES—*continued.*	M. CH.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
Cambridge Street	2 54	3,887	–	33	165	4,085	334	– –	– –	– –	119	121	1
Cardiff (*a*)	5 66	51,588	–	–	838	52,426	973	– –	22,764	– –	1,600	3,073	2
Cardiff District and Penarth Harbour.	2 33												
Chester	2 30	6,070	–	34	221	6,325	30	– –	1,869	– –	369	337	3
Chesterfield	No Return received.		–	–	—	—	—	—	—	—	—	—	4
Coventry and District	Line closed, being refitted for electric working.					—	—	—	—	—	—	—	5
Croydon	6 63	11,648	–	–	245	11,893	754	– –	4,103	– –	750	416	6
Derby	4 64	11,421	–	–	425	11,846	– –	– –	4,734	– –	500	459	7
Dewsbury, Batley, and Birstal	4 23	6,151	–	–	169	6,320	530	1,249	35	480	– –	260	8
Drypool and Marfleet	1 27	2,433	–	–	3	2,436	229	1,315	– –	250	– –	78	9
Dudley and Stourbridge	5 12	7,714	–	–	388	8,102	641	1,198	– –	1,969	– –	468	10
Dudley and Wolverhampton	5 62	No return received.		–	—	—	—	—	—	—	—	—	11
Eccles Corporation	Tramways leased. Traffic included in "Manchester Carriage and Tramways Company's" Return.										—	—	12
Exeter	2 30	Cars, 1,364 Omnibuses, 1,031 Season Tickets, 17	–	–	141	2,553	62	– –	1,015	– –	209	94	13
Folkestone, Sandgate, and Hythe (owned and worked by South Eastern Railway Company).	3 30	1,951	–	–	– –	1,951	289	– –	851	– –	97	183	14
Gateshead and District	6 40	9,431	74	–	379	9,884	597	1,931	– –	1,010	– –	Included with Engines.	15
Gloucester	2 76	3,039	–	–	210	3,249	115	– –	973	– –	120	67	16
Gosport, Alverstoke, and Bury Cross.	Works not commenced.			–	—	—	—	—	—	—	—	—	17
Gravesend, Rosherville, and Northfleet.	2 20	1,501	–	–	166	1,667	31	– –	976	– –	– –	32	18
Great Grimsby (*a*)	4 67	6,231	–	–	105	6,336	489	– –	2,147	– –	223	231	19
Harrow Road and Paddington	2 68	10,834	–	–	272	11,106	779	– –	3,197	– –	448	398	20
Hartlepools	Line closed.	—	–	–	—	—	—	—	—	—	—	—	21
Highgate Hill	Line closed.	—	–	–	—	—	—	—	—	—	—	—	22
Huddersfield Corporation (worked by the Local Authority).	19 68	25,164	380	–	580	26,124	3,560	6,440	– –	2,960	– –	1,256	23
Hull Street	No Return received.		–	–	—	—	—	—	—	—	—	—	24
Ipswich	4 21	2,733	–	–	95	2,828	345	– –	875	– –	128	74	25
Keighley	2 28	2,389	10	–	935	3,334	350	– –	1,275	– –	201	171	26
Lancaster and District	4 24	5,487	96	–	78	5,661	446	– –	1,914	– –	1,232	23	27
Lea Bridge, Leyton, and Walthamstow. (*i*)	4 64	23,437	–	–	1 90	24,627	233	– –	11,404	– –	142	1,020	28
Leamington and Warwick	3 0	5,306	191	–	289	5,786	572	– –	2,676	– –	250	392	29
Leeds Corporation	14 13	Return of Leeds Tramways Company for period ending 1st February 1894, on which date the Corporation of Leeds											
		25,007	170	–	1,606	26,783	1,154	4,219	8,096	– –	353	1,300	30
		Result of five months working of acquired lines :											
		18,978	117	–	519	19,614	1,822	3,701	6,502	– (*k*) –	722	924	31
	3 7	Roundhay line worked electrically by Thomson, Houston & Co., from whom no return has been received.											
Leicester	8 74	36,024	–	–	1,061	37,085	962	– –	13,377	– –	1,000	1,721	32
Lincoln	1 64	2,305	–	–	80	2,385	140	– –	604	– –	91	82	33
Liverpool Corporation	28 69												
Bootle Corporation	3 20												
Walton Local Board	3 20	Cars, 210,489 Omnibuses, 61,313	–	3,166	4,044	279,012	2,144	– –	118,436	– –	13,896	10,253	34
Wavertree Local Board	1 10												
West Derby Local Board	5 23												
TOTAL	41 62												
Llanelly (*n*)	0 78	*1,168*	–	–	– –	*1,168*	*Worked in connection with posting and omnibus business, so cannot*						35
London	23 20	344,728	–	–	4,344	349,072	20,116	5,311 (cable)	105,912	– –	14,411	5,288	36

(*a*) These figures are for the year ended 30th September 1894. (*b*) Including omnibuses. (*c*) Estimate. (*d*) Also 17 omnibuses and brakes.
(*e*) Also seven omnibuses and one brake. (*f*) Insurance premium. (*g*) Also three omnibuses.
(*h*) No record kept. (*i*) These figures are for the year ending 31st October 1894. (*j*) Also 21 omnibuses. (*k*) Included in Column 2.

Working Expenditure, and Net Receipts, &c., to 30th June 1894—*continued.*

	WORKING EXPENDITURE.								NET RECEIPTS.	Number of Passengers Conveyed (including Season or Composition Ticket-holders).	Number of Miles Run by Cars.	Working Stock.		
	Traffic Expenses.	Direction and Management.	Rent of Offices, Stables, and Sheds.	Rates, Taxes, and Tolls.	Compensation for Personal Injury.	Legal and Parliamentary.	Any other Working Expenses not included in the foregoing.	TOTAL.				Number of Horses.	Number of Locomotive Engines.	Number of Cars.
	£.	£.	£.	£.	£.	£.	£.	£.	£.					
1	1,639	284	5	97	- -	- -	44	2,643	1,442	665,874	90,000	21	- -	7
2	16,009	300	1,870	- -	60	- -	- -	46,654	5,772	11,635,372	1,379,646	569	- -	(*b*) 67
3	1,340	393	- -	357	- -	18	208	4,921	1,404	(*c*) 687,900	(*c*) 191,900	72	- -	(*d*) 11
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	4,121	521	97	204	114	- -	- -	11,080	813	2,061,816	266,952	116	- -	13
7	3,615	446	178	249	- -	- -	7	10,188	1,658	2,710,992	262,564	108	- -	(*e*) 18
8	1,090	200	- -	288	- -	- -	- -	4,132	2,188	1,330,300	145,450	1	9	13
9	454	153	76	76	(*f*) 124	- -	148	2,903	*Loss, 467*	(*c*) 778,560	118,913	- -	7	8
10	834	250	- -	281	- -	4	326	5,971	2,131	1,851,346	115,093	- -	10	8
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13	837	- -	100	50	- -	162	189	2,718	*Loss, 165*	Cars, 318,242 Omnibuses, 109,874	Cars, 45,000 Omnibuses, 45,000	40	- -	(*g*) 4
14	445	- -	18	- -	- -	- -	- -	1,383	68	(*c*) 156,106	(*h*)	20	- -	4
15	1,150	471	565	- -	528	- -	801	7,053	2,831	1,819,205	179,883	- -	15	14
16	1,199	111	73	- -	10	- -	110	2,778	471	729,478	135,815	33	- -	10
17	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	419	- -	110	30	- -	- -	- -	1,598	69	187,529	55,227	14	- -	5
19	1,238	225	367	- -	6	- -	- -	4,926	1,410	1,087,298	245,486	52	- -	16
20	3,660	408	120	166	- -	16	- -	9,192	1,914	2,066,688	223,246	113	- -	19
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	—	—	—
23	2,627	787	200	917	17	- -	612	19,376	6,748	4,026,240	397,668	2	24	24
24	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	936	69	20	43	- -	22	64	2,576	252	375,527	68,776	23	- -	8
26	1,012	151	- -	94	- -	7	166	3,427	*Loss, 93*	573,264	77,630	36	- -	7
27	1,678	187	113	239	- -	- -	389	6,221	*Loss, 560*	406,530	91,632	65	- -	14
28	7,199	280	953	- -	212	- -	- -	21,443	3,184	4,197,119	520,670	242	- -	(*j*) 16
29	407	150	77	154	- -	- -	248	4,926	860	785,554	105,472	52	- -	14
30	took possession : 4,267	663	380	565	156	94	755	22,002	4,781	4,801,344	511,574	361	25	69
31	3,234	187	249	335	49	- -	534	18,259	1,355	(*c*) 3,643,776	395,366			
32	9,953	1,025	145	861	12	36	162	29,254	7,831	8,447,196	804,442	323	- -	45
33	760	65	- -	103	- -	- -	- -	1,845	540	391,082	51,662	14	- -	6
34	53,938	3,247	1,855	6,678	470	382	1,445	212,744	(*l*) 66,268	Cars, 26,449,711 Omnibuses, 9,530,580	Cars, 4,059,484 Omnibuses, 1,748,253	3,272	- -	(*m*) 178
35	*be ascertained*	- -	- -	- -	- -	- -	- -	- -	- -	*280,500*	*46,500*	*12*	- -	*5*
36	90,599	4,239	6,075	6,691	2,316	2,590	14,434	278,032	71,040	80,539,019	7,863,997	3,060	- -	(*o*) 354

(*l*) The lessees deduct from this sum 855*l.* for interest, and 40,767*l.* for rent.
(*m*) Also 92 omnibuses.
(*n*) This return being incomplete, the figures are not included in the general totals.
(*o*) Also 58 omnibuses.

PART II.—RETURN of Street and Road Tramways, showing the Gross Receipts,

NAME OF TRAMWAY.	Length of Tramway Open.	GROSS RECEIPTS. From Passengers.	From Parcels and Mails.	From Animals, Goods, and Minerals.	From all other Sources.	TOTAL.	WORKING EXPENDITURE. Maintenance of Way and Works.	Locomotive Power.	Animal Power.	Repairs and Renewals of Engines.	Renewals, &c., of Horses.	Repairs and Renewals of Cars.	
ENGLAND AND WALES—*continued.*	M. CH.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
London, Camberwell, and Dulwich.	Not open for traffic.		–	–	–	–	–	–	–	–	–	–	1
London, Deptford, and Greenwich.	4 72	26,297	–	–	472	26,769	1,139	– –	7,051	– –	847	981	2
London Southern (*a*) – – –	5 60	16,671	–	–	316	16,987	1,055	– –	6,854	– –	571	687	3
London Street – – – – –	13 37	132,097	–	–	1,904	134,001	6,131	– –	46,613	– –	3,700	3,874	4
Manchester Carriage and Tramways Company.	*25 9*												
Eccles Corporation – –	*2 16*												
Manchester Corporation –	*32 33*												
Moss Side Local Board –	*1 50*	392,816	3,048	–	6,084	401,948	6,240	– –	125,113	–	23,316	16,989	5
Oldham Borough (portion) –	*4 76*												
Salford Corporation – –	*12 60*												
Withington Local Board –	*1 19*												
TOTAL – – –	80 23												
Manchester Corporation – –	Tramways leased. Traffic included in "Manchester Carriage and Tramways Company's" Return.									—	—	—	6
Matlock – – – – – –	0 40	1,064	–	–	43	1,107	166	(*c*) 278	– –	12	– –	153	7
Middlesbrough and Stockton –	2 61	Cars, 3,434 Steamers, 1,580	–	–	180	5,244	170	(*d*) 1,389	1,860	– –	151	81	8
Morecambe – – – – –	2 60	3,977	–	–	109	4,086	66	– –	1,246	– –	303	138	9
Moss Side Local Board – –	Tramways leased. Traffic included in "Manchester Carriage and Tramways Company's" Return.									—	—	—	10
Neath and District – – –	3 77	4,230	8	–	53	4,291	260	– –	1,315	– –	135	130	11
Newcastle-upon-Tyne Corporation. (Lessees' Return.)	11 36	29,796	182	–	259	30,237	887	– –	11,560	– –	951	1,935	12
Newport (Mon.) (Company's) –	1 13	7,115	–	–	287	7,402	305	– –	1,788	– –	429	406	13
Newport (Mon.) (Corporation) –	In course of construction.			—	—	—	—	—	—	—	—	—	14
Northampton Street – – –	5 33	7,842	–	–	590	8,432	59	– –	3,032	– –	270	488	15
North Bierley Local Board –	Tramways leased to Bradford and Shelf Tramways Company (Limited). For traffic, *see* "Bradford Corporation" Return.											—	16
North Metropolitan – – –	51 55	447,112	–	–	12,802	459,914	29,653	– –	150,538	– –	15,215	8,923	17
North Shields and Tynemouth District.	2 46	1,721	–	–	97	1,818	98	332	– –	305	– –	60	18
North Staffordshire – – –	7 0	17,627	142	–	379	18,148	1,343	1,865	53	1,137	– –	428	19
Nottingham and District – –	10 40	30,031	–	–	879	30,910	1,364	– –	14,028	– –	942	1,136	20
Oldham Borough (Corporation) –	Tramways leased. Traffic included partly in "Bury, Rochdale, and Oldham" Return, and partly in "Manchester Carriage and Tramways Company's" Return.												21
Oxford (City of) and District –	4 2	11,229	–	–	432	11,661	1,272	– –	2,590	– –	371	– –	22
Plymouth Corporation (worked by the Local Authority).	4 0	5,321	–	21	182	5,524	16	– –	3,045	– –	– –	32	23
Plymouth, Stonehouse, and Devonport (*i*).	2 24	13,911	–	–	212	14,123	436	– –	4,537	– –	508	581	24
Pontypridd and Rhondda Valley	No Return received.		–	–	—	—	—	—	—	—	—	—	25
Poole and Bournemouth – –	Not constructed.		–	–	—	—	—	—	—	—	—	—	26
Portsmouth Street (including Borough of Portsmouth, &c.) (*i*)	15 27	41,080	–	–	2,547	43,627	2,905	– –	16,376	– –	1,731	2,310	27
Preston Corporation and Fulwood Local Board. (Lessees' Return.)	6 26	11,257	–	–	280	11,537	– –	– –	5,041	– –	– –	505	28
Reading – – – – –	2 28	6,297	–	–	284	6,581	223	– –	2,893	– –	414	282	29
Rossendale Valley – – –	6 47	8,343	83	–	245	8,671	393	2,118	– –	676	– –	161	30
St. Helens and District – –	10 62	8,424	81	–	570	9,075	1,600	550	41	1,150	– –	505	31
Salford Corporation – – –	Tramways leased. Traffic included in "Manchester Carriage and Tramways Company's" Return.									—	—	—	32
Sheffield Corporation – – – (Lessees' Return.)	9 34	36,562	–	–	790	37,352	3,589	– –	16,515	– –	1,263	1,079	33

(*a*) The accounts are made up annually. These figures are therefore for the year 1893. (*b*) Estimate. (*c*) Cable system, and two stationary engines.
(*d*) Cost of working ferry steamers. (*e*) Two ferry steamers are in use. (*f*) Also seven omnibuses. (*g*) Also four omnibuses.
(*h*) Also 16 omnibuses. (*i*) The figures are for the year ended 30th September 1894. (*j*) Average.

Working Expenditure, and Net Receipts, &c., to 30th June 1894—*continued.*

	WORKING EXPENDITURE.								NET RECEIPTS.	Number of Passengers Conveyed (including Season or Composition Ticket-holders).	Number of Miles Run by Cars.	Working Stock.		
	Traffic Expenses.	Direction and Management.	Rent of Offices, Stables, and Sheds.	Rates, Taxes, and Tolls.	Compensation for Personal Injury.	Legal and Parliamentary.	Any other Working Expenses not included in the foregoing.	TOTAL.				Number of Horses.	Number of Locomotive Engines.	Number of Cars.
	£.	£.	£.	£.	£.	£.	£.	£.	£.					
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	9,328	937	200	282	651	- -	- -	21,416	5,353	5,971,614	551,896	236	- -	24
3	5,113	325	564	- -	444	- -	- -	15,613	1,374	2,841,157	471,970	168	- -	20
4	43,295	1,200	6,221	Included in previous Column.	1,244	- -	- -	112,278	21,723	24,753,416	2,482,105	1,181	- -	136
5	104,730	9,037	2,749	9,615	1,875	149	5,715	305,528	96,420	(b) 47,138,008	8,300,314	4,037	- -	465
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	397	77	- -	25	- -	- -	30	1,138	*Loss,* 31	(b) 240,000	(b) 19,000	—	(c)	3
8	517	415	137	- -	- -	10	46	4,776	468	Cars, 825,360 Steamers, 322,809	Cars, 117,667 Steamers, 36,771	34	(c)	9
9	935	125	30	93	- -	- -	213	3,149	937	(b) 950,480	(b) 57,500	50	- -	10
10	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11	933	167	36	131	- -	- -	200	3,307	984	600,798	95,177	40	- -	8
12	4,519	980	261	1,012	178	10	4,645	26,938	3,299	3,885,522	590,096	279	- -	31
13	2,136	230	153	245	- -	- -	199	5,941	1,461	1,707,599	256,500	75	- -	(f) 8
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	1,101	649	- -	91	6	- -	201	5,897	2,535	1,703,716	185,359	86	- -	16
16	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	116,250	10,687	2,978	16,381	9,473	Included in previous Column.	2,565	362,663	97,251	82,627,342	8,266,543	4,043	- -	431
18	431	147	16	88	- -	- -	23	1,450	368	269,911	42,737	- -	5	(g) 5
19	5,362	1,148	45	508	262	- -	- -	12,151	5,997	3,086,950	292,301	1	20	22
20	3,067	992	51	778	67	74	270	22,769	3,141	5,136,398	596,217	278	- -	(h) 36
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	2,484	600	73	142	- -	11	1,038	8,581	3,080	2,613,069	244,892	91	- -	16
23	2,155	109	273	153	- -	- -	99	5,832	*Loss,* 353	1,277,048	150,427	96	- -	17
24	2,089	225	379	1,083 (Tolls.)	17	- -	- -	9,895	4,228	2,344,819	165,039	106	—	27
25	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26	—	—	—	—	—	—	—	—	—	—	—	—	—	
27	11,134	300	1,660	- -	41	- -	- -	36,462	7,165	6,649,208	1,024,311	340	- -	68
28	2,257	200	165	233	- -	- -	2,113	10,514	1,023	(b) 2,104,500	260,370	(f) 110	- -	31
29	635	412	181	- -	- -	4	93	5,137	1,444	1,037,510	147,818	60	- -	11
30	1,223	496	73	95	- -	31	- -	5,267	3,404	1,227,250	179,975	- -	11	10
31	2,111	367	25	292	6	48	231	6,926	2,149	1,249,090	165,256	1	9	10
32	—	—	—	—	—	—	—	—	—	—	—	—	—	—
33	3,573	1,050	361	1,726	- -	6	318	29,480	(k) 7,872	6,007,563	683,428	111	- -	Cars, 44 Omnibuses, 4

(k) From this profit the Lessees deduct interest, mileage, rent to the Corporation of Sheffield, amounting to 3,949*l.*

PART II.—RETURN of Street and Road Tramways, showing the Gross Receipts,

NAME OF TRAMWAY.	Length of Tramway Open.	GROSS RECEIPTS. From Passengers.	From Parcels and Mails.	From Animals, Goods, and Minerals.	From all other Sources.	TOTAL.	WORKING EXPENDITURE. Maintenance of Way and Works.	Locomotive Power.	Animal Power.	Repairs and Renewals of Engines.	Renewals, &c., of Horses.	Repairs and Renewals of Cars.	
ENGLAND AND WALES—*continued.*	M. CH.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
Shelf	Tramway leased to "Bradford and Shelf Tramways Company, Limited." For traffic *see* Bradford Corporation Return.										—		1
Shipley Local Board	Tramway leased by Bradford Tramways and Omnibus Company, Limited. For traffic *see* Bradford Corporation Return.												2
Somersetshire	Not constructed.		–	–	—	—	—	—	—	—	—	—	3
Southampton Street	5 3	16,412	140	–	510	17,062	472	- -	5,224	- -	491	1,179	4
South Eastern Metropolitan	2 45	10,798	–	–	373	11,171	316	- -	5,334	- -	- -	287	5
South Gosforth	0 59	9,124	23	–	66	9,213	218	- -	4,000	- -	376	422	6
South London	12 70	76,916	–	–	1,305	78,221	6,315	- -	- -	- -	2,146	3,920	7
Southport	6 42	10,180	98	–	578	10,856	1,092	- -	2,796	- -	575	157	8
South Shields Corporation (Lessees' Return.)	2 43	5,535	29	–	170	5,734	- -	- -	2,403	- -	212	405	9
South Staffordshire	22 51	29,293	150	389	437	30,269	3,117	(c) 5,298 (d) 7,240	256	575	- -	568	10
Stockport and Hazel Grove	3 35	6,113	60	–	336	6,509	356	- -	- -	- -	316	154	11
Stockton-on-Tees and District	6 23	4,964	–	–	234	5,198	104	386	843	296	53	92	12
Sunderland (Company)	3 76	13,197	–	–	820	14,017	719	- -	5,043	- -	385	825	13
Sunderland (Corporation)	2 27	Tramways leased. Traffic included in Sunderland (Company's) Return.							—	—	—	—	14
Swansea	5 39	15,331	32	–	327	15,690	779	- -	6,540	- -	540	1,085	15
Tong Local Board	Tramways leased. Traffic included in Return of "Bradford Tramways and Omnibus Company, Limited" with "Bradford Corporation" Return.												16
Wallasey	No Return received.	–	–	—	—	—	—	—	—	—	—	—	17
Walton-on-the-Hill	Tramways leased to "Liverpool United Tramway and Omnibus Company." For traffic *see* "Liverpool Corporation" Return.												18
Wantage	2 38	870	152	814	404	2,240	182	- -	- -	373	- -	12	19
Wavertree Local Board	Tramways leased. Traffic included in "Liverpool Corporation" Return						—	—	—	—	—		20
West Derby Local Board	Tramways leased. Tramway included in "Liverpool Corporation" Return.						—	—	—	—	—		21
West Metropolitan	10 12	No Return received.	–	—	—	—	—	—	—	—	—	—	22
Weston-super-Mare, Clevedon, and Portishead.	No Return received.	–	–	—	—	—	—	—	—	—	—	—	23
Wigan (Corporation) (Lessees' Return.)	5 39	8,506	115	–	235	8,856	26	724	82	222	- -	72	24
Wirral	2 79	4,609	–	–	438	5,047	460	- -	1,475	- -	100	134	25
Wisbech and Upwell (Great Eastern Railway Company).	7 64	1,030	48	1,492	- -	2,570	388	896	- -	368	- -	82	26
Withington Local Board	Tramways leased. Traffic included in "Manchester Carriage and Tramways Company's" Return.									—	—	—	27
Wolverhampton	8 55	11,159	255	–	209	11,623	431	- -	4,193	- -	213	501	28
Wolverton and Stony Stratford	2 20	1,585	40	–	46	1,671	27	170	- -	111	- -	55	29
Wolverton and Stony Stratford (Deanshanger Extension).	No Return received.	–	–	—	—	—	—	—	—	—	—	—	30
Woolwich and South East London.	4 77	15,924	–	–	266	16,190	743	- -	4,682	- -	722	764	31
Worcester	3 22	No Return given.	–	—	—	—	—	—	—	—	—	—	32
Wrexham District	3 25	1,015	3	–	- -	1,018	126	- -	320	- -	70	65	33
Yarmouth and Gorleston	3 8	5,264	3	–	148	5,415	416	- -	2,003	- -	170	68	34
York	3 8	3,759	–	–	146	3,905	238	- -	1,126	- -	117	75	35
TOTAL, ENGLAND AND WALES	772 7	2,856,738	8,129	5,949	89,382	2,960,198	142,091	127,684	847,025	48,233	101,931	98,470	36

(a) Also 15 omnibuses. (b) Average. (c) Steam power. (d) Electric traction.
(e) Estimate. (f) Includes 962 *l.* paid to Corporation for rent and interest.

Working Expenditure, and Net Receipts, &c., to 30th June 1894—*continued.*

WORKING EXPENDITURE.								NET RECEIPTS.	Number of Passengers Conveyed (including Season or Composition Ticket-holders).	Number of Miles Run by Cars.	Working Stock.		
Traffic Expenses.	Direction and Management.	Rent of Offices, Stables, and Sheds.	Rates, Taxes, and Tolls.	Compensation for Personal Injury.	Legal and Parliamentary.	Any other Working Expenses not included in the foregoing.	TOTAL.				Number of Horses.	Number of Locomotive Engines.	Number of Cars.
£.	£.	£.	£.	£.	£.	£.	£.	£.					
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
4,562	600	520	- -	238	- -	- -	13,292	3,770	2,453,941	340,895	154	- -	26
2,547	160	128	160	2	3	- -	8,937	2,234	2,094,355	202,275	100	- -	12
1,522	350	200	58	12	- -	90	7,318	1,895	1,074,190	198,654	99	- -	12
21,667	1,688	883	712	1,073	85	31,318	69,807	8,414	16,758,386	1,725,776	773	- -	(a) 85
1,619	532	60	378	- -	1	204	7,414	3,442	1,224,849	192,199	(b) 72	- -	23
1,573	328	46	135	2	- -	150	5,254	480	1,246,135	187,016	67	- -	10
6,350	1,000	89	707	400	- -	281	25,881	4,388	4,816,782	623,906	6	36	50
4,472	- -	129	127	- -	- -	- -	5,554	955	(c) 1,100,160	(c) 131,248	73	- -	12
2,475	182	63	85	137	- -	- -	4,666	532	1,010,854	154,378	28	8	16
1,109	880	25	339	12	- -	120	8,957	(f) 5,060	2,352,106	267,810	113	- -	33
—	—	—	—	—	—	—	—	—	—	—	—	—	—
2,239	1,035	127	684	1	63	160	13,256	2,434	2,626,460	379,714	141	- -	25
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
1,168	40	- -	42	- -	12	- -	1,829	411	36,109	(g) 13,780	- -	4	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
2,479	225	57	404	- -	50	95	4,436	(h) 4,420	1,002,229	147,400	- -	12	12
1,560	175	- -	129	- -	7	190	4,230	817	(c) 810,004	(c) 169,220	44	- -	7
555	- -	- -	64	- -	- -	41 (Goods claims).	2,394	176	104,254	32,590	- -	5	9
—	—	—	—	—	—	—	—	—	—	—	—	—	—
1,037	820	- -	548	11	4	107	7,865	3,758	1,510,493	214,193	100	- -	18
600	- -	21	40	- -	- -	91	1,115	556	196,772	16,288	- -	3	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—
5,725	935	63	239	7	- -	121	14,001	2,189	2,794,035	333,342	160	- -	20
—	—	—	—	—	—	—	—	—	—	—	—	—	—
203	30	10	7	- -	- -	- -	836	182	67,430	(c) 17,800	10	- -	4
1,003	266	73	251	- -	- -	120	4,350	1,065	825,500	(c) 113,500	53	- -	10
1,076	136	63	- -	- -	- -	84	2,915	990	902,210	120,211	37	- -	(i) 10
683,193	67,857	45,315	69,121	23,440	5,488	77,012	2,336,860	623,338	501,494,739	59,281,399	24,007	532	3,393

(h) Annual rent payable to the Corporation of Wigan is 2,200*l.*

(i) Also one omnibus.

Part II.—Return of Street and Road Tramways, showing the Gross Receipts,

NAME OF TRAMWAY.	Length of Tramway Open.	GROSS RECEIPTS. From Passengers.	From Parcels and Mails.	From Animals, Goods, and Minerals.	From all other Sources.	TOTAL.	WORKING EXPENDITURE. Maintenance of Way and Works.	Locomotive Power.	Animal Power.	Repairs and Renewals of Engines.	Renewals, &c., of Horses.	Repairs and Renewals of Cars.	
SCOTLAND:	M. CH.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
Aberdeen District	10 49	20,549	–	–	682	21,231	561	–	7,547	– –	174	925	1
Dundee Corporation (Lessees' Return.)	7 15	15,404	67	–	3,657	19,128	– –	2,281	3,132	1,401	561	535	2
Edinburgh Corporation (Lessees' Return for period from 10th December 1893 to 30th June 1894).	11 70	45,087	199	–	1,379	46,665	2,405	–	16,721	– –	2,334	1,217	3
Edinburgh Northern	2 49	15,614	–	–	276	15,890	2,238	1,074	– –	(a)	– –	(a)	4
Edinburgh Street	6 52	"The Revenue Account has been worked as a Joint Purse Working Account with the lessees of the Edinburgh Corporation Tramways since 9th December 1893, and it is quite impossible to give any reliable information as to the working receipts and expenditure of this company."											5
Glasgow Corporation (c)	30 17	255,168	5,238	–	8,324	268,730	10,061	–	101,376	– –	13,879	8,333	6
Govan Corporation (Lessees' Return.)	3 66												
Gourock Corporation (formerly part of Vale of Clyde).	Tramways leased to Greenock and Port Glasgow Tramways Company. (*See* their Return.) —									—	—	—	7
Govan Corporation	Tramways leased to Glasgow Tramways and Omnibus Company, Limited. (*See* their Return.)									—	—	—	8
Greenock and Port Glasgow (d)	2 68	9,353	–	–	728	10,081	48	–	4,761	– –	200	319	9
Gourock Corporation	1 74												
Greenock Corporation	2 47												
Greenock Corporation	Tramways leased to Greenock and Port Glasgow Tramways Company. (*See* their Return.) —									—	—	—	10
Paisley	2 0	2,337	–	–	245	2,582	– –	–	944	– –	305	119	11
Perth and District	Not yet constructed.		–	–	—	—	—	–	—	—	—	—	12
Rothesay	2 30	3,909	25	–	116	4,050	526	–	701	– –	111	175	13
Stirling and Bridge of Allan	3 29	2,761	103	–	270	3,134	416	–	1,331	– –	– –	88	14
TOTAL, SCOTLAND	188 6	370,182	5,632	–	15,677	391,491	16,255	3,355	136,513	1,401	17,564	11,711	15
IRELAND:													
Belfast and Ligoniel	Tramway worked by Belfast Street Tramways Company. Traffic included in that Company's Return.										—	—	16
Belfast Street	20 11	92,564	325	–	1,985	94,874	3,297	–	32,796	– –	4,756	3,920	17
Belfast and Ligoniel	1 37												
Sydenham District	1 58												
Blessington and Poulaphuca	Not constructed.		–	–	—	—	—	–	—	—	—	—	18
Castlederg and Victoria Bridge	7 12	850	87	1,027	12	1,976	224	388	– –	65	– –	28	19
Cavehill and Whitewell	3 38	2,837	–	–	86	2,923	265	–	968	– –	57	25	20
Dublin and Blessington	15 68	4,186	417	808	90	5,501	729	1,929	– –	284	– –	88	21
Dublin and Lucan	6 78	3,932	73	469	220	4,694	766	1,018	– –	712	– –	279	22
Dublin Southern District	7 71	10,126	–	–	660	10,786	441	–	6,010	– –	188	385	23
Dublin United	33 28	129,857	3,240	–	4,157	137,254	10,026	–	39,902	– –	4,542	6,391	24
Galway and Salt Hill	2 10	1,352	–	–	166	1,518	73	–	558	– –	34	165	25
Giant's Causeway, Portrush, and Bush Valley.	8 60	2,620	15	13	11	2,659	190	777	– –	150	– –	85	26
Londonderry (City of)	Not constructed.		–	–	—	—	—	–	—	—	—	—	27
Lucan, Leixlip, and Celbridge	1 42	No Return received.		–	—	—	—	–	– –	– –	—	—	28
Portstewart	1 68	515	56	–	8	579	37	249	– –	60	– –	– –	29
Sydenham District (Belfast)	Tramway worked by the Belfast Street Tramways Company. Traffic included in that Company's Return.										—	—	30
Warrenpoint and Rostrevor	3 24	1,294	40	–	50	1,384	76	–	347	–	48	51	31
TOTAL, IRELAND	115 45	250,133	4,253	2,317	7,445	264,148	16,124	4,361	80,581	1,271	9,625	11,417	32
TOTAL, UNITED KINGDOM	975 58	3,477,053	18,014	8,266	112,504	3,615,837	174,470	135,400	1,064,119	50,905	129,120	121,598	33

(a) Included under "Maintenance." (b) Included under "Direction and Management." (c) Many of the items are only approximate estimates.
(d) These particulars are inclusive of the Greenock Tramways for a full year, and of the Gourock Tramways after 12th February 1894.

Board of Trade, 1894.

Working Expenditure, and Net Receipts, &c., to 30th June 1894—*continued*

WORKING EXPENDITURE.								NET RECEIPTS.	Number of Passengers Conveyed (including Season or Composition Ticket-holders).	Number of Miles Run by Cars.	Working Stock.		
Traffic Expenses.	Direction and Management.	Rent of Offices, Stables, and Sheds.	Rates, Taxes, and Tolls.	Compensation for Personal Injury.	Legal and Parliamentary.	Any other Working Expenses not included in the foregoing.	TOTAL.				Number of Horses.	Number of Locomotive Engines.	Number of Cars.
£.	£.	£.	£.	£.	£.	£.	£.	£.					
4,451	773	25	402	- -	- -	654	15,512	5,719	4,206,328	436,106	202	- -	21
2,787	400	25	340	19	61	1,939	13,481	5,647	2,971,000	233,116	94	10	19
7,161	996	220	1,013	261	- -	1,021	33,349	13,316	7,176,000	713,400	680	- -	70
3,429	1,204	(b)	425	(b)	(b)	(b)	8,370	7,520	3,412,170	345,143	- -	(Cable traction.)	16
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	298	- -	30
40,414	3,152	- -	10,003	2,382	- -	48,710	238,310	30,420	53,729,472	4,944,204	2,730	- -	222
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
989	291	210	234	109	- -	51	7,212	2,869	1,384,379	213,187	138	- -	17
—	—	—	—	—	—	—	—	—	—	—	—	—	—
838	41	90	19	- -	18	37	2,411	171	595,800	79,759	35	- -	8
—	—	—	—	—	—	—	—	—	—	—	—	—	—
789	252	50	114	18	4	80	2,820	1,230	526,706	94,041	34 (Ordinarily.)	- -	18
357	120	- -	139	- -	- -	254	2,705	429	(e) 321,233	(e) 53,931	30	- -	(f) 8
61,215	7,329	620	12,689	2,789	83	52,746	324,170	67,321	74,623,088	7,112,887	4,241	10	429
—	—	—	—	—	—	—	—	—	—	—	—	—	—
22,773	1,450	1,478	- -	655	- -	- -	71,125	23,749	19,349,116	2,093,328	854	- -	100
—	—	—	—	—	—	—	—	—	—	—	—	—	—
316	- -	- -	57	- -	1	254	1,333	643	32,890	21,360	- -	3	(g) 5
579	170	156	34	- -	- -	66	2,320	603	262,638	76,326	32	2	7
567	398	136	26	6	63	755	4,981	520	79,094	38,927	- -	6	(h) 10
758	189	25	63	7	170	349	4,336	358	214,674	62,874	- -	6	(i) 13
1,788	480	194	- -	- -	110	35	9,631	1,155	1,283,474	310,456	131	- -	24
27,147	3,775	838	3,568	269	301	2,702	99,461	37,793	19,195,517	2,404,849	1,231	- -	162
491	48	34	66	25	17	- -	1,511	7	189,319	41,004	22	- -	7
309	168	48	23	112	1	2	1,865	794	82,874	30,100	- -	3	17
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
40	- -	3	- -	- -	- -	27	416	163	64,204	15,720	- -	2	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—
284	143	66	29	- -	- -	3	1,047	337	101,203	35,990	10	- -	9
55,052	6,821	2,978	3,866	1,074	663	4,193	198,026	66,122	40,855,003	5,130,934	2,280	22	357
799,460	81,907	48,913	85,676	27,303	6,234	133,951	2,859,056	756,781	616,972,830	71,525,220	30,528	564	4,179

(e) Estimates. (f) Also one omnibus. (g) Also 23 wagons and two brake vans. (h) Also 12 wagons and two vans.
(i) Also 14 open goods wagons and one timber truck.

FRANCIS J. S. HOPWOOD.

TRAMWAYS (STREET AND ROAD).

RETURN of STREET and ROAD TRAMWAYS Authorised by Parliament, showing the Amount of CAPITAL Authorised, Paid up, and Expended, the Length of TRAMWAY Authorised, and the Length Open for the Public Conveyance of PASSENGERS, down to 30 June 1894; the GROSS RECEIPTS, WORKING EXPENDITURE, and NET RECEIPTS; the Number of PASSENGERS Conveyed; and the Number of MILES Run by Cars, during the Year ending 30 June 1894; together with the Number of HORSES, ENGINES, and CARS at that Date (in continuation of Parliamentary Paper, No. 400, of Session 1893–94).

(*Mr. Burt.*)

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